THE URINAL OF PHYSICK.

By ROBERT RECORDE Doctor of Physick.

Whereunto is added an ingenious Treatise, concerning *Physitians*, *Apothecaries*, and *Chyrurgians*, Set forth by a Dr. in Queen *Elizabeths* dayes.

With a Translation of *Papius Ahalfossa* concerning *Apothecaries* Confecting their Medicines; Worthy perusing, and following.

LONDON.
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MVSEVM
BRITAN
NICVM

To the Reader.

IF either the corruption, or abuſe of things, might deprive us of this lawful and neceſſary uſe of them, even the ſacred Scriptures, our laws, our proviſions of life and clothing, might fall under declenſion, if not abolition. It is true from the inſpection of Urine, ſome have preſumed to pretend a larger judgment, and indication, then may juſtly be drawn or conjectured out of it; yet it is generally concluded by Phyſitians, both Ancient and Moderne, that both Urine and Pulſe are ſo neceſſary, that without them all knowledge of Phyſick, beſides, is doubtful, obſcure, and uncertaine: whereof

the first sheweth the estate of the Liver and Veines, the second of the Heart and Arteries: The Urine because with the blood it is convened into all parts of the body, and from thence returneth back again into the Veins, to the Liver and Urinal vessels, bringeth with it some Indicature of the state and disposition of all those parts from whence it cometh: and who shall please to peruse that exact piece of *Daniel Becherus*, shall find observable pieces, both concerning the Urine, and divers experimented Medicines made with it Concerning the judgment of the Pulse, who shall please to peruse Doctor *May* upon *Pennant*, shall find the Pulses motion not so certain an Indicature, because in some Diseases there is cessation, or none, or small appearance to conjecture by. Concerning the Author, he was one of the first who laboured to reduce the tractate thereof, unto order and Method,

thod, and hath been ſeconded by laborious *Fletcher*, to whom our Engliſh Nation oweth much for their labours: The antiquity and paines of the Author hath cauſed it to be preſented again to the Preſs, hoping, with judicious men, it ſhall receive the acceptance is deſired and ſtudied

By the well-wiſher
of your health,

R. R.

THE PREFACE.

THough the unſatiable greedineſs of covetous men do many and ſundry wayes hurt, yet ſome wayes it may do no leſs good, if men will not diſdain (as they ought not) to uſe it in ſuch ſort as I ſhall ſhew you. The good uſe of a covetous example.

But becauſe that unſaciableneſs is never ſatisfied, but beſides thouſands of means invented already to quench the unquenchable greedineſs, it ſeeketh and findeth daily new and new means innumerable, ſo that it were an infinite labour to declare them all. I will wittingly, and purpoſed-

ly paſſe them over, only taking one general ſentence, which ſhall be inſtead of all the reſt.

Veſpaſian, one of the great School-Maſters of Avarice, which could pick out profit of every thing (yea, even of mens Urine) taught his Schoolers (I mean the whole court of covetous perſons) this leſſon enſuing:

Lucri bonus odor ecce qualibet.

Lucre is ſweet, and hath a good ſavour;
Though it come of Urine, dirt or Ordure.

This ſentence, if it be withdrawn from the filthy lucre of unſatiable covetouſneſs, wherein it is deteſtable, & imployed rather to the due lucre of mans ſuſtenance, then it becomes tolerable: But if it be referred to the neceſſary lucre of mans health, then is it greatly commendable. If there can be then any commodity for mans health gathered out of Urine, (as there may be much) men ſhould not be negligent in ſeeking of that thing which ſhould do good both to themſelves and others? ſeeing the covetous are ſo diligent in ſeeking for that thing which ſhall profit neither themſelves nor others? And

And the negligence is so much the greater, if men be more remisse in seeking after so necessary a thing in a matter so commendable, then the covetous in a bad thing.

But in as much as this thing (by reason it is not plainly set forth) is with no less difficulty to be studied on, then it is necessary to be used, the ignorant may have some excuse: I therefore in the name of many other, have taken this pains on me, to set forth this thing so plainly, that ignorance can have no excuse. Ignorance set aside.

But that no man should doubt of the truth of this Treatise, or of mine intent, in putting forth the same rather in this our English tongue then in any other: I shall briefly shew reasons of both. Why this Book is written.

First, for the truth of it, I will boldly speak, knowing for certain that no man that can judge it, will say or think otherwise, but that it is as true as mans knowledge can devise it. The first reason.

And it is the opinion of the most excellent writers of Physick both Greeks, and Latine; namely, *Hippocrates*, *Galen*, *Ætius*, *Æginota*, *Philotheus*, *Theophilus*, *Actuarius*: also *Cornelius Celsus* *Plinus*,

Plinus, *Conſtantinus*, *Africanus*, and *Clementius Clementinus*, with others more, conferring alſo with theſe *Avicenna*, *Egidius*, *Polidamus*, and ſuch like: But with what temporance and moderation they that are learned may perceive. Theſe have I followed chiefly in this judgment of Urines.

And in the uſe of Medicine and Diſeaſes touching Urine, I have joyned with them *Dioſcorides*, *Quintus*, *Serenus*, *Columela*, *Sextus Platonicus*, and divers others. Now if there be any man that doubteth of the truth of thoſe writers in this thing, I am not here to force beleef upon them.

The intent of the Author.

But now as touching mine intent in writing this Treatiſe in Engliſh; though this cauſe might ſeem ſufficient to ſatisfie many men, that I am an Engliſh man, and therefors may moſt eaſily and plainly writ in my native tongue, rather then in any other, yet unto them that know the hardneſs of the matter, this anſwer ſhould ſeem unlikely: conſidering that it is harder to tranſlate into ſuch a Tongue, wherein the Art hath not been written before, then to write in thoſe Tongues in which

the

the terms of the Art are better expreſſed.

Now to ſhew briefly the cauſes moivng me thereunto. I am ſure, there are but few that ever ſought counſell for their health, but they know that the common trade to attain to the knowledge of the Diſeaſe, is by the judgement of the Urine, though not alone, yet as the principal.

Likewiſe, as there is not any thing ſo good, but the abuſe of it may cauſe harm to enſue thereupon. So this judgment of Urines, though it be a thing highly to be regarded, yet if it be uſed raſhly without foregoing ſigns it may cauſe (as it doth often) ſome error in the judgment of the Phyſitian, though he were right excellently learned: not ſo much by the ignorance of the Phyſitian, as by want of knowledge in the Patient, which ſhould inſtruct the Phyſitian, in ſuch queſtions as he needed to demand of him: and not to look that the Phyſitian ſhould tell him all things at the firſt ſight, more like a God then man.

So that if there be any Phyſitian ſo arrogant, that he will take upon him to tell all things alone, and will not hear the Patient

ſpeak

ſpeak, ſpecially not knowing the party before, neither ſeeing other ſigns but only the Urine, as I drre boldly pronounce, that ſuch a man is unworthy to be called a Phyſitian. So it ſhall be good for all men, not to truſt to the judgment of ſuch a one: for by ſuch miſ-uſe in this thing not only much harm befalls the patients, ſo that it hath been the occaſion of many mens death, but alſo very much reproach hath enſued to the whole eſtate and order of Phyſitians, and hath cauſed that excellent and moſt neceſſary Art to be contemned, derided, and little ſet by.

The uſe of this Book.

To avoid the more this inconvenience, I have written this little Treatiſe to all men in common, that they may learn to have ſome knowledge in their own Urines, and thereby may be the better able to inſtruct the Phyſitian, at the leaſt, what ſort of urine they have made from time to time from the beginning of their ſickneſs, and ſomewhat before.

And alſo what ſort of Water they were wont to make in their health? ſo that if men will be diligent to mark their Water in time of health, they ſhall

ſhall not only be able to inſtruct the Phyſitian (as I have ſaid) but ſhould be alſo able to perceive the cauſe of the Diſeaſe ſometimes before the grief come, and ſo by the counſel of ſome diſcret Phyſitian avoid the ſickneſs before it be fully entred: yea, and by due marking of their Urine, they ſhall perceive from time to time, how they ſhall govern themſelves in Meats and Drinks, in Exerciſe and Reſt, and the like things, ſo that thereby they may eſchew both the diſeaſes, and alſo the cauſe of the ſame.

Now what a commodity this may be to all men, and what thanks he hath deſerved that hath taught this ſo great a commodity to all men in general, I leave it to every mans own judgment.

And thus (as you may perceive) I have declared the cauſes of this my pains, taking them to be for the profit of the whole Commons indifferently

differently. Howbeit, if any mean learned Phyſitian ſhall be thereby furthered in his judgment, I will not envy him, but will be the gladder, the more number of men I perceive to take benefit by it.

The difficulty of Judgment in Urine.

I am ſure that the true judgment of Urines, according to the mind of *Hippocrates*, *Galen*, and ſuch like, is very hard, though not to excellent Clerks, yet to the meaner ſort; partly by reaſon that it is written ſo diſperſedly in their works, and not in any one Booke peculiarly and ſufficiently: and partly becauſe that ſundry words uſed in the ſame (as in the reſt of Phyſick) are obſcure to them that have not been exerciſed in all kinds of Learning, and that with the knowledge of both the *Greek* and *Latine* Tongues. Therefore I truſt, that this my pains ſhall be ſome help alſo, to them that lack the Exerciſe of ſuch ſtudy and knowledge.

But

But becauſe there is a common ſaying in the mouths of many men now a dayes, that it is a profaining of Learning, and a means to bring it into contempt, ſo to ſet it forth in the vulgar Tongue, that every man indifferently may read it, and ſtudy it.

The anſwer unto it.

To this I will briefly anſwer, that this ſaying is not only againſt many great learned mens Acts and Examples, but alſo againſt manifeſt reaſons: beſides, that it encludeth a pernitious kind of counſel. For if every thing ſhould be put away, or left undone, that evil men may pervert and uſe to an evil purpoſe, ſo ſhould we have no good thing remain: Meats and Drinks muſt be taken away, becauſe many abuſe of it. And becauſe evil men do abuſe of both Eyes, and Tongues, ſhall all men therefore pluck out their Eyes and their Tongues? Becauſe many men do abuſe Laws and Authority, ſhall men expell Laws

and

and high Powers? Many evil men and Hareticks have misinterpreted Gods word neverthe leſs to be taught vulgarly to all men. Though the Pope, Cardinals, and Monks, have practiſed to poyſon men, even with the very Sacrament of the Supper of the Lord, yet no man will be ſo mad, therefore to eſchue the uſe of that bleſſed Sacrament: And yet all this followeth, if men alow that common ſaying, above written. Better means it were to ſet forth publikely all that might do good to the publique wealth, and ſtreightly to puniſh the abuſes of them, then to puniſh good men and good things, becauſe that evil men offend. It is a like error to that ſort of Doctrine, which contemned wine as an evil thing, becauſe that many were made drunk with it. But to leave this, and to come more particularly to the matter.

What is learning unlearned, or knowledge unknown, any thing elſe but a vain name? Learning then encreaſeth moſt, when it is ſtudied of moſt: And learning then triumpheth moſt, when it hath moſt favourers and followers. And then doth ignorance (learnings enemy) rejoyce moſt, when

when learning reigneth in feweſt, and blindneſs ruleth moſt: ſo that then is learning moſt profained, contemned, and hated, when it hath moſt enemies: that is to ſay; when moſt men are ignorant. For that old ſaying ſhall alwaies be true: Learning hath no enemy, but the ignorant.

Plutarch his ſentence.

Ask that great Clerk *Plutarch* what is mind is in this: Whether the judgement of health be a meet thing for every man to ſtudy: and thou ſhalt hear him anſwer: That ſhame it is for men to obſerve the crying of Crowes, and ſuch like things in Beaſts and Birds, whereby men judge of the change of Weathers, and to be negligent in marking motions within themſelves, and alterations preparing unto ſickneſs. Yea, he requireth ſo exact knowledge in every man appertaining unto health, that he noteth it for a great ſhame, and calleth it unſenſibleneſs in a man if he be ſo ignorant, that he ſhal need to ask of the Phyſitians, what meats are beſt for him. And to ask what meats ſhall beſt digeſt in him, is as abſurd a queſtion (ſaith he) as to ask what meats are ſweet, ſoure, or bitter, and ſuch like. Yea beyond all this, he requireth in every man the knowledge of his own Pulſe, which is a thing harder then the judgement of Urines.

Examples of Writers in the Vulgar tongue.

Now if you require Examples, the whole world is full of them. They that wrote in Greek, wrote in their own vulgar tongue: and so did they that wrote in Latine, write in their own common speech.

Besides that, have we not infinite examples of Learned men in *Germany*, *France*, and *Spain*, which wrote of Physick in their own tongue? Yea, Is not our own *England* full of Examples? How many Books of Practises? how many Herbals? and other like Books of Physick, hath there been put forth many yeers past? And yet unto this day do not learned wits sleep. How much is all *England* bound to that Worthy and Learned Knight Sir *Thomas Eliot*, which took the pains to build a Castle of Health for all English men (besides many other learned Books that he hath put forth in the Vulgar tongue) whereby a man may learn both to govern himself so, that though he escape not all sicknesses quite, yet he shall eschew the great dangers of them? *England* may rejoyce of such a Knight: yea, *England* hath too few that followeth such example. But if *England* had as many well willing doers as she hath cruell and spiteful disdainers, then were *England* the Flower of all Realms in the world.

Sir *Thomas Eliots* Castle of Health.

Now

Now will I leave this and draw nearer to my purpoſe, and will deſire all men that ſhall read this Book, patiently to bear with my blodneſs, and thankfully to receive my good mind. And if there ſhall be found in this Book, or in any other that I ſhall put forth, a ſmall error or overſight (for greater errors, I dare ſay there ſhall be none) I ſhall deſire all them that ſhall find any, to advertiſe me thereof by word or writting, and I ſhall be ready not onely to render condign thanks, but alſo to amend duely that ſhall be thought amiſſe, or elſe to yeeld a reaſon for the proof of the ſame,

An exhortation to the Reade

And now to make an end: I will deſire every man ſoberly and diſcreetly to uſe this my Book, not uſing it to the taunting or checking of other men: nor to truſt in their own knowledge further then they ought.

And likewiſe I ſhall exhort all men, not to mock and jeſt with any Phyſitian (as ſome light wits do) tempting them with Beaſts ſtale, in ſtead of mens urine: others bringing to them mens water for womens, and ſuch other like things. For in this doing they deceive not the Phyſition, but themſelves. For a mans water to be like a womans, it need ſeem no ſtrange thing. How-

beit, again there is a notable difference, insomuch that that water which in a man declareth health, if it were a womans, might declare some disease; and likewise that which in a woman signifieth health; if it were a mans water, it might betoken sickneſſe. And if a mans water and womans be like, and betoken both diseases, those diseases may be divers and not one.

Yea two mens waters being both alike, shall not declare alwaies one grief, except they agree also in age, diet, exercise, and other like things.

Also that a Beasts Water may be like a Mans (the Mans sickneſſe being thereafter) *Hippocrates* witnesseth, and experience teacheth, as I shall declare hereafter.

Therefore if you seek the Patients health, look that you receive the urine diligently: and as soon as you can, present it to the Physitian, and be diligent to instruct him in all things that you can, and that he shall not have need to ask. And so no doubt, you shall receive great commodity of that Art, to the health of man, and the glory of God, which hath given such knowledge unto man.

THE

THE URINALL OF PHYSICK.

CHAP. I.

Of the Division and Order of this Book.

BEcause that nothing done confusedly can be well understood of the Readers, for every thing the better order it hath, the better it may be understood, and is much more easily remembred, when the order of it is well and certainly known: I have therefore digested this Book orderly, as I shall here set forth, to the intent that you may read, as it were in grosse the whole Book, and thereby keep it the better in remembrance. The sum of this Book

First, therfore I will declare the nature of Urine, what it is, and how it is ingendred within man, and how it passeth forth from man.

Secondly, of the order of receiving it in a convenient vessel. And of the time and place meet to consider it.

Thirdly, how many things are to be considered in Urine: and how many waies they may be altered in a healthful man.

Fourthly, what significations and tokens may be gathered of Urine, concerning any alterations in man, past, present, or to come.

Fiftly, to what use in medicine Urine may serve: and of other good uses of it to mans commodity.

And *last* of all, I wil declare certain diseases touching Urine, which either let it, or cause it to void unwillingly: with the Medicines and remedies meet for the same.

CHAP. II.

How Urine is ingendred in Man and how it passeth forth.

AS unto them that are learned & know by the Art of Anatomy the scituation of the parts of man, and the natural office of

of every part, it is eaſie enough to perceive the original generation and cauſe of Urine, without any example: ſo unto them that neither know the ſcituation, nor offices, no, neither yet the names of the parts of mans body, it is ſcarce poſſible to make them to perceive the generation of Urine, without ſome ſenſible example. But becauſe it is very hard to find an artificial example, which can alone duely expreſs this work of Nature, I will uſe therefore an example of a natural work, which ſhall expreſſe in many points this thing, though not in all; for ſuch can there none be, but the thing it ſelf.

And in as much as this example is not eaſie to be underſtood of all men, though the moſt part do now a daies partly know it by experience of finding ſprings of waters, I will firſt propoſe an artificial example, to make both the other to be the better perceived.

It is daily ſeen in diſtilling of Waters, that the temperate heat of the fire doth ſeparate the pureſt part of the juice from the herbs, and alſo from the groſſer juice. This by natural lightneſs is drawn into the head of the Stillatorie, where by the coldneſs of the helmet, it is made ſomewhat groſſer, and ſo through natural heat deſcendeth and An example of Stilling.

passeth forth by the Pipe of the Stillatorie.

The Originall. And as the Art of man useth to make this water, so doth nature use to make the water of springs, whereof come all rivers, streams and floods, except the sea. For seeing the earth is not perfectly sound and thick of substance, as stones and some woods appeareth to be, but it is hollow and full of holes, as you see that cork is: so that the air which by his subtleness pierceth into never so little a hole, entreth and filleth this hollowness, nature so leading to it, because no place should be emptie: In which place by the coldness of the earth, the air is turned into water, as you may see in walls and pillars of stone, namely, of marble, how the coldness of the stone turneth the air into water, and hangeth full of drops, which sometimes trickle down apace, as if they did sweat. So when the earth hath turned the air thus into water, then doth it drop down and gathereth together, and so runneth out as it can find or prepare way. As long therefore as there is hollowness in that place, with such sort of coldness, and none other let, the Spring of water shall never cease. But if the way by any means be stopped, then the water turmoileth and

Cause of springs.

labou-

labour eth, either to expel that let, or to make a new way.

Now this water being thus ingendred of the air which hath no taſte, is alſo naturally without all taſte: but the taſte that it hath is the taſte of the veines of earth or mettal, by which it doth run. And that is the cauſe that ſome waters are ſweet, and ſome ſoure; ſome freſh, and ſome ſalt, and otherwiſe diverſly taſted; ſome alſo are hot, and ſome cold, and with other like qualities indued, according to the ground whereby it paſſeth. But of this I will not now ſpeak, becauſe I have appointed for it a peculiar Treatiſe, if God grant me time: Only this I ſay now, that a man that is expert, can by the colour, taſte, and other qualities of the water which he ſeeth, tell what veins of earth or mettals is in that place whence that water cometh, though he ſee it not. The cauſes of diverſity in taſt of Water.

And this water is expelled out of his firſt place, as unprofitable there to remain; and yet when it is come forth thence; it is good for divers and ſundry uſes.

Thus may we think of the generation and uſe of Urine or mans water. The generation of Urine.

It ſhall not need that I here reckon exactly the *Places*, Cauſes, and the Order of the three Concoctions which go before the generation Three Concoctions.

neration of Urine, but it ſhall ſuffice to tell briefly, that of the meat and drink together concocted in the ſtomack is made rude blood: (if I may ſo call it) which rude blood is wrought again, and made more perfecter in the liver: and thirdly yet more purified in the hollow vein, where the Urine is ſeperate from it, as whey from milk, but yet may not exactly be called Urine, till it come into the reins or kidnies, which draw it out of the hollow vein, by a certain natural power reſting in them. And then doth the reins or kidnies alter it perfectly into Urine, as the coldnes of the ground turns air into water. But you muſt take this comparison or ſimilitude to be ſpoken of the alteration it ſelf, and not of the cauſe.

Now when Urine is thus made like to that faſhion of water (as I ſaid) then as the water paſſeth forth from his firſt place, by iſſues outward, ſo doth the Urine deſcend from the reins by certain veins (as it were) called Water-pipes, and runneth into the Bladder, from whence at due times it is expelled forth, if the way be not let. So that you may compare the reins to the head of a conduit, the water-pipes, to the conduit pipes, the bladder to the conduit, and the ſhaft to the rock of the conduit.

And

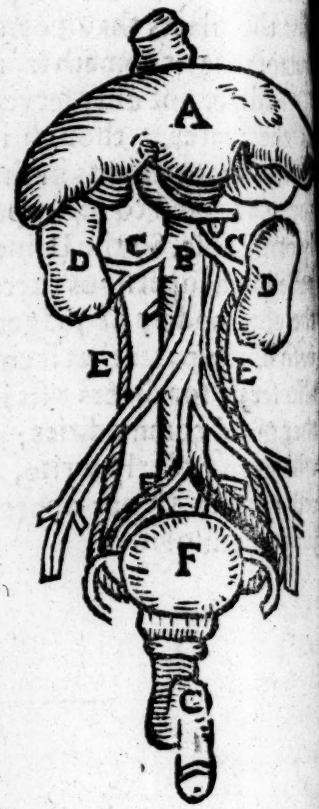
And further as the water doth declare by taſte & Colour the qualities of the earth, or veins of mettal, whereby it runneth, and from whence it commeth, ſo the Urine by Colour, and other wayes, declareth of what ſort the places that it cometh thorow, and humors that it cometh from, are affected.

And yet not only ſerveth for this, but alſo as the water, though it depart from the earth as ſuperfluous in that place, yet in other places and to other purpoſes it is greatly profitable. So the Urine, though it be expelled as a ſuperflous excrement, yet beſide the commodity of judgement, which it giveth of the parts that it cometh from, it doth alſo ſerve for divers uſes in medicine, and other good commodities: Of both which, I will anon orderly write, after I have declared certain things appertaining to the due judgement of it.

Of

Of the Instrument and parts by which Urine is engendred and passeth, mark this Figure following.

A, Is the liver.
B. The hollow vein.
C. Veins by which the reins do draw the Urine, and therefore be called sucking veins.
D. The reins.
E. The water Pipes.
F. Is the Bladder.
G. The spout of the yard.



All the other parts beside, appertain to Generation and seed.

CHAP.

CHAP. III.

What Urine is, and what tokens it giveth in general.

Ou have heard now how Urine is ingendred, from whence it cometh, and what places it paſſeth, which things all, the intent that you may the better keep nind, you ſhall note this ſhort Definiti-

rine is the ſuperfluity or wheyie ſubſtance The definition of Urine. he blood into a hollow vein, conveyed by reins and water pipes, into the bladder. that hereby you may plainly perceive, t if the bloud be pure and clean, and none er grief in the reins, Water-pipes, Blad-, nor Shaft, then ſhall the Urine ſo declare being alſo perfect and pure in ſubſtance Colour, and all other tokens according the ſame. But if there be any grief in of thoſe parts, or the blood corrupt by means, then ſhall the Urine declare cer- tokens of the ſame, as I ſhall anon parti- arly expreſſe.

But firſt it ſhall be neceſſary to inſtruct of the Veſſel, Place, and Time, meet to ge Urine, and of the manner of receiving

CHAP.

CHAP. IIII.

Of the Form of the Urinal, and of the pla and time meet to Judge Urine, and how it should be received.

THat Urine should be kept to see, whic is first made after midnight commonly or namely when the Patient hath slept long but you must take heed whether the Patien be Man or woman, that they make not the Urine in another Vessel first (as many use do) and then pour it into the Urinal whe it is Selted, for that causeth much decei and error in the judgment of it. And that the Patient cannot well make it in th Urinal, either by weakness, or any othe cause, then let them make it in another Ves sel; but see that it be clean and dry; and soon as the Water is made, pour it forth pre sently into the Urinal altogether, and leav no part of it out, as some curious folk d use to put the clear part only into the Uri nal & cast away the dregs, as though it stoo not with their Modesty to bring such fou gear to the Physician, others of such like foo lish mind, pour it therefore in wholly, an let not the Urinal stand open, namely in dusty place, but stop it close with a Glove o othe

The order to receive Urine.

other leather, and not with cloth, paper, nor
hay, and let it be brought to the Physician
within six hours at the furthest, for after that
time it cannot well be judged.

Now as touching the Urinal, it should be of pure clear glass, not thick, nor green in Colour, without blots or spots in it, nor flat in the bottom, nor too wide in the neck, but widest in the middle, and norrow still toward both the ends, like the fashion commonly of an Egg, or of a very Bladder being measurably blown (for the Urinal should represent the Bladder of a Man) and so shall every thing be seen in his due place and Colour. If neither the grosness of the Urinal neither the Colour, nor spots shall let the true sight of the Colour & Substance of the Urine, and the Contents of it: neither the deform fashion of the Urinal shall alter the Regions or Rooms of the Urine. The Urinal.

Likewise concerning the place meet to behold Urines, you must look that it be neither too dark, so that your sight should not discern perfectly, either the Colour, Substance or Contents, for lack of Light: neither yet that your sight be likewise deceived if the place be too lighe, as in open light or beams of the Sun. The place.

Besides this also you must mark the time due The time.

due to behold Urines, but because there can no one time be assigned certain and exact to judge all parts of it, I will briefly shew the Order of the things to be considered in their time.

First, when the Urine is made, while it is yet somewhat hot, you shall consider the colour of it: for that may best be discerned then; and likewise the thickness of the substance of it, which if it be mean, shall then be best seen. All other things, as the Bubbles and the Contents shall be best judged somewhat after, when the Urine is somewhat cooled, and they be duly setled in their proper places.

CHAP. V.

How many things are to be considered in Urine.

Four things to be considered in Urine, *viz.* Substance, Colour, Quantity, Contents.

NOw leaving this as a brief instruction of the generation of the Water or Urine, and of the manner of receiving it in vessels due, with time and place meet to consider it. I will particually declare how many things are to be considered in it, which are commonly named four, that is the Substance, the Colour, the Quanity, and the Contents; and

and the Savour thereto may be added as the fift; to the which fift, if you ſhall joyn ſtableneſs and order, as to accidents common to the firſt four things, (but yet no leſs to be conſidered then they) then ſhall you judge the more certainly.

Stableneſs is called, when the Urine continueth certain dayes together of one ſort. And if it alter every day, then is that called Unſtableneſs or Changeableneſs, to which thing Order doth appertain: For Order is the following of one thing after another, as Black Coloured Urine after White, Green or Pale. I mean not, becauſe that ſo it ought to follow, but only that you muſt obſerve how it doth fellow. For Black Urine doth not ſignifie the ſame if it follow after Green Urine, as it doth if it follow after white Urine: ſo that the Order ought alſo to be marked.

Stableneſs.

Unſtableneſs.

Order.

But now to return to the four firſt things.

Subſtance is called in Urine, the Urine it ſelf, in reſpect of the thickneſs or thinneſs of it: So that there are 3. ſorts of Subſtance in Urine: Thick, Thin, and Mean.

Subſtance.

Three ſorts of ſubſtance in Urine.

Thin Subſtance is called, when you may perceive well the joynts of your Fingers through the Urine. And contrariwiſe it is called Thick, when you cannot well ſee your

Thin.

Thick.

Mean Colours

fingers through it: and that is in the middle between extream thick and extream thin, is called, Mean.

Colours are divers, but the principal are these six, White, Pale, Flaxen, Yellow, Red, and Black. And all the other Colours are contained under these six.

Light White as Chrystally, Snowy. Watery.

As under White, are contained clear as Chrystal, white as Snow, and pure as Water, which three are light Whites.

Dark white as milk-White, Horny, Gray. Pale, Flaxen, Yellow.

Then are there other three more darker, as milk White, cleer like Horn, and Grey.

After White, followeth pale Colour, and then Flaxen, after it followeth pale, and then Yellow, which may be called Golden, for it is the Colour of pure Gold.

Light Saffron, Saffron Colour. Claret. Red. Crimson. Purple. Blew.

After it followeth light Saffron, and then Saffron, then claret Colour, and then Red, after it Crimson, and then Purple, and then Blue.

Green. Oily.

Then is there Green of divers kinds, as light Green, Green as grass, stark Green, and dark Green.

There are also oyl Colours (that is, Popingay Green) of three sorts: as of Green, light oily, stark oily, and dark oily.

Ash Colour. Black.

After these is there Ash Colour like unto Lead; & after it, as last of all cometh Black. And these be the chief Colours.

Now

Now as touching Quantity, it is alſo in three ſorts; Much, Little, and Mean.

Then it is called Much Quantity, when it exceedeth the meaſure of a mans drinking. Quantity. Much,

And then it is called Little, when a man piſſeth leſs then he drinketh. Little.

And that is Mean, when a mans piſſing & his drinking is of like Quantity. All this muſt be conſidered by due proportion. Mean.

The Contents are all things in the water, that be of another Matter & Subſtance particularly, then is the Urine: as the Sediment or Ground, the Sublation or Swim, and the Cloud. To theſe are added other diſ-form Contents, like Hairs, like Husks, like Bran, and ſuch other. And alſo the Crown of the Urine, with the Bubbles, and other things ſwiming on the top of it. Contents. Sediments. Sublation. Cloud. Crown.

For the better underſtanding of theſe Contents, you muſt note that the whole Urine from the top to the bottom, is divided commonly into three Rooms or Regions.

The lowermoſt is the Region of the Ground or Sediment: ſo that the Grounds or Sediments are the Contents that occupy the lowermoſt region. Or yet more properly, the Sediment is called a certain ſubſtance of groſſer Matter then is the Urine, like to a quantity of very watery Flegm, which fleeteth Four rooms or Regions. Ground or Sediment.

a little above the bottome of the Urine: But if it be ſo light, that it ſwim in the middle region of the Urine, then is it called the Sublimation or ſwim.

Sublimation or Swim

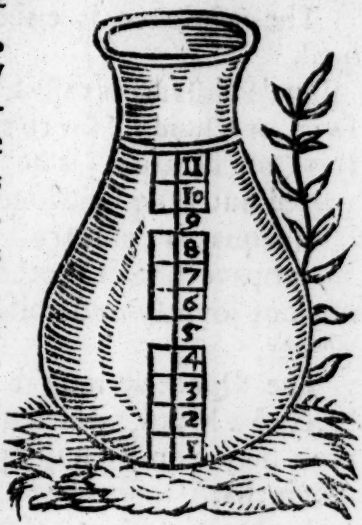
And if it be yet more lighter, ſo that it doth fleet in the Higheſt part of the Urine, then it is called a Cloud: whereby you may perceive that the Ground, the Swim, and the Cloud are but one thing in Subſtance, and differ only by lightneſs and height, and taketh his name according to the region that it occupieth. But yet again note, that every one of the 3. regions, is farther divided into other parts alſo; whereby you may know exactly, how far all Contents differ from the juſt room of their Region; ſo that the whole Urine muſt be divided into eleven juſt parts, of which the nether Region occupieth four, the fift is the void Room between that and the middle Region, which containeth 3. more, that is to ſay, the ſixt, ſeventh, & eight. And then the ninth is a void Room between the middle Region and the higheſt, which higheſt Region, containeth the other two parts that remain, that is the tenth and the eleventh, as the Figure ſheweth which hereafter followeth.

Cloud.

Another diviſion of the three Regions.

Above

ABove these 3. Regions, about the very Brink of the Urine, you may see a certain Ring as it were, going about, and that is cal'd the Crown.



Crown.

Highest of all things in the Urine are the Bubbles which either go about with the Ring only, or else fleet in the middle of the Urine only, or else both. Yea sometime they cover all the whole top of the Urine.

Bubbles.

Besides these, there is oftentimes as it were Flotes or Fattiness on the top, and sometime certain Spots only, which are like to drops of Oyl. And these commonly are the whole Contents. For as for Gravel or Stone, or any like thing is contained under the name of difform Contents.

Fattiness.

You shall also understand, that in the Contents must the Substance, the Quantity, and Colour be observed.

Substance. The Substance is either equal or unequal.

Equal. Equal Substance is called, when the Ground swim, or Cloud, (for to them appertaineth this Consideration) is not tattered and Dispersed, but justly knit together.

Unequal. Unequal is contrary, when it is thinner in one part then in another, or flittered out, and not joyntly and uniformly Joynted together.

Quantity. The Quantity must be considered in respect to a Mean, which if you know well, then may you soon judge that to be overmuch, that is more then it: & that to be too little, that is less then it: But this mean Quantity must you learn of a perfect whole Water, and best by the Teaching of some good Physitian.

Of Colours I have spoken before sufficiently for their Variety.

CAAP. VI.

What a perfect Urine is, and also how many Wayes all parts of the Urine may be altered in a Healthful man.

NOw that you know the difference of such things that ought to be consider-

ed

red in Urine, before you shall learn by consideration of them, to judge of the Person that made it, how he is disposed in his Body: you must first know how many wayes the parts of the Urine may be changed in a healthful man. For the better understanding of which thing, and of all that shall be said hereafter, I will first define what a perfect whole Urine is, which as it betokeneth no Grief in it self, so it is a true rule to examine all other Urines by that, which are not whole, but declare in them some Grief.

A perfect whole Urine is mean in substance and in Quantity, and in Colour pale, or party Saffron, with a White Ground, duly knit and stable, without Bubbles and other evil Contents. A perfect whole Urine *Galen c. 12. Crisib.*

So that this perfect whole Urine declareth the difference of all other Urines; For every Urine the more it agreeth with this, the better it is: and the more it differeth from this, the worse it is, as I shall anon particularly declare.

And here you must mark, that this perfect whole Urine is not only taken of a perfect whole man, but also of the lustiest time of mans Age, that is at thirty yeers: or more largely, between twenty five and thirty five. For in every Age doth the Urine alter, as you shall hear by and by.

The difference of Urine by Age in Men.

Children. THe Urine of Children differeth but little in Colour from Pale, or light Saffron, and in ſubſtance it ſomewhat exceedeth in thickneſs the ſubſtance of yong Mens Urine and hath much ground in it. And the more they do grow in Age, the higher waxeth the Colour, the ſubſtance the thinner, & the leſs is the ground. And therefore when Age is moſt freſheſt, the Colour is Pale (ſo that the Urine of flouriſhing youth or perfect Manhood, is Pale or light Saffron) and there reſteth, and goeth no higher, and the ground of it is mean. But now after that time the more Age increaſeth & youth decayeth, the more the Colour changeth from Pale toward White, & the ground waxeth leſſer and darker: ſo that the Urine of old Men is thin and White, with little ground, inclining unto Crudity.

Galen 2. preſag. Hip. pec. 13.

Young men.

Men.

Age.

Of the Urine of Women by Age.

Women. THe Urine of Women which are temperate in Health and in their flouriſhing Youth, doth decline ſomewhat from Pale and light Saffron toward White, and the ſubſtance

ſtance is in manner thin, but it hath more Ground then mens Urine; now all they that be under this flouriſhing Age, the younger they be, the whiter Coloured is their Urine, and the more Ground it hath; and if they be elder, the more Aged they are, the whiter alſo is their Urine, but the Ground is ever leſs and leſs. And this you may ſee how both diverſity of Age, & diverſity alſo of Kind or Sex, cauſeth alteration in Urine, without change of Health; for you muſt underſtand all theſe Ages with perfect Health.

Young women.

Aged women.

The diverſity of Urines, according to the time of the Yeer.

EVen as the diverſity of Ages alters Urine, ſo doth the times of the yeer. For the more that the Springtime draws toward heat the more the Urine gathereth high Colour, departing from Pale & Flaxen, toward Pale & light Saffron: and the Inequality of ſubſtance changeth into a due Equality according to Nature, & the Ground doth wax thinner, and the Quantity is more in reſpect to that is drunk: ſo that about the middſt of the Spring they return to a mean.

Spring.

In the beginning of Summer, the Colour appeareth Pale and light Saffron, & the ſubſtance

Summer.

ſtance Mean, the Ground white, duly knit and ſtable, but yet thinner then a mean Ground. And the more that the Summer proceedeth and draweth to the higheſt, the leſſer is the Quantity of Urine, in Compariſon to the Drink and the Ground, changeth from his natural Whiteneſs to a paliſh Colour & is much leſſer and thinner. And this thinneſs gliſtereth withal, and inclineth toward Golden and Saffron Colour.

Harveſt. When Harveſt cometh, then the Colours do return to a Mean again: but the thinneſs and brightneſs remaineth ſtill; the Ground alſo is ſtill Obſcure and little, but yet it is White, duly knit and ſtable. And as Harveſt goeth forward, ſo the Urine returneth to a Mean in all things.

In the middle of Winter and thereabout, the Urine keepeth due Quantity, but the Colour inclineth toward White, and the Ground is over great, but in all other Points it is Mean.

Winter. And as Winter goeth on, the ſubſtance of Urine appeareth divers, & the Colour White, the Quantity greater in reſpect to the drink, and the Contents greater and unconcoct; but toward the Spring time they return towards a Mean, as I have before ſaid.

Yet beſide theſe, alſo diverſity of Countries

tries causeth diversity of Urine, even by the same Reasons as doth the times of the Yeer. For Countries that be Temperate exactly, make Urine like unto the Spring time. And those Countries that be Hot and Dry make Urine like unto Summer. And contrariwise, Cold & Moist alter Water, as doth Winter. But Countries that are Dry and distempered between Heat and Cold, make Urine like Harvest. Countries alter Urine.

Also Meats and Drinks, and order of Diet, causeth Urine to alter, and Medicines also, as not only Experience teacheth, but also *Hippocrates* witnesseth in the sixt Book of his *Epidemies*, (or raining Sicknesses) in the fift Part and the fifteeneth Sentence, as for example: Those Meats that are light of Concoction and good in Substance, cause good and temperate Urine with pure Contents: but contrary Meats cause discoloured Urine, and thin, with strange Contents. Meats Drinks and Medicines. Meats of light Concoction.

Meats that will not Concoct, make lesser Contents, and divers in Substance. Evil Meats cause greater Contents, & in nothing duly formed. And as the Qualities of Meats doth alter Urine, so doth the Quantity also. For if a man have eaten much, and not Concocted it, his Urine shall be thin and White, and sometime without Ground. But if this crudity Meats of hard Concoction.

crudity (or rawneſs in ſtomack) continue long, the Urine will become divers in ſubſtance, and in Contents.

Drinking of *Wine.* Alſo Wind drunk abundantly cauſeth alteration in Urine.

Faſting long. But now contrariwiſe, if a man do faſt long, his Urine will appear fiery and Saffron Coloured, and thin with leſſer Ground.

Suffering of famine. But if a man ſuffer Famine, and do not nouriſh, his water ſhall be thin and white, with a certain Gliſtering, and without Ground.

Labour. Moreover, Exerciſe and Reſt changeth Urine: for through exceſſive labour, the Urine changeth from light Saffron, and at length becometh Saffron Coloured, with little Ground, Thin, and higher Coloured then it ſhould be. And ſome time there fleeteth on the top a certain Fatneſs, eſpecially after overmuch wearineſs.

Reſt. But Idleneſs and Reſt doth contrariwiſe cauſe white Urine, with greater and groſſer Ground.

Sleep. *Watching.* Furthermore Sleep, and Watching, if they exceed meaſure, they alter Urine; but there is a difference between both Sleep and Watching coming of Sickneſs, and them both when they be taken willingly in Health. For if that Sickneſs cauſeth overmuch Sleep, then

then is the Urine Whitish, with substance either fully thick, or but partly thin, and the Contents many and undigest.

But if that such sleep come naturally the Urine is not so White, but rather Flaxen, and the substance mean, with greater and well concoct Contents. Natural sleep.

And likewise they that have watched purposedly, and not by reason of sickness, their Urine is but little changed. But if they watch for any sickly Cause, their Urine will change but little at the beginning: but with continuance the Contents will be dispersed, and at the last clean washed, and the substance of the Urine waxeth thinner and thinner, by little and little, and the Colour inclineth either to white and watery, or unto golden Saffron, Oily, or Black, according as the Cause is that maketh it so to change. Voluntary sleep. *Watch in sickness.*

Of alteration by Complexion, I will write in the next Chapter.

Now have you heard as touching alteration of Urine in health, according to diversity of Ages, both in men and women, times of the yeer, Countries, Meats and Drinks, Labour, Rest, Sleep, and Watch: so that you must have regard to these in all judgements both in health and in sickness. For if these be not diligently marked, they may cause

cause great Error, as you may well consider.

What is to be considered in Urine

First therefore, in every Urine you must consider, whether it be a mans or a womans, and what Age he or she is of, then what time of the yeer it is, and what Country, what Meats and Drinks the Person used; and likewise of Labour and Rest, Sleep and Watch: And then must you consider how every one of these doth alter Urine: so that if the altering of them from that healthful Urine (whereof I speak in the beginning of this Chapter) be but such as one of those foresaid things would cause, then may it not be judged to come of any Disease, as for example. High Coloured water in Summer (so that it pass not Saffron Colour) or white Coloured water in Winter, should rather be reckoned to come of the time of the yeer, then of any Sickness: and likewise of other things.

CHAP. VII.

What be the general Qualities that alter the parts of Urine.

BEfore I treat of the Signification of the parts of Urine, I think it good to instruct you

you of the general Qualities which cause all alterations in Urine: whereby you shall perceive not only what every Urine doth betoken (as I shall anon set forth) but also if you mark well this Chapter, you shall see the cause why every Urine doth so signifie.

You shall understand therefore, that there be four chief and only Qualities, whereof all things that are both in the Sea and Earth are made: as Man & Beast, Fish and Fowl, Trees, Hearbs, Stones, & Mettals. These four Qualities are Heat, Cold, Moistness and Drineſs: and these four continuing duly tempered (as Nature ordered them first in every perfect Body) be the cause of continual health. But if they be altered wrongly, then do they cause Diseases diversly, according to the diversity of the Alterations: And as they do cause Diseases, so they change the Colour, Substance, & other parts of the Urine, whereby we may conjecture the cause of the Disease; and so consequently the Disease it self, though sometime it declareth the Disease it self and not the cause thereof.

But now to come to the Matter meetest for this time, you shall mark that two of these four Qualities are named Passive, and they cause but small alteration in Comparison. *Passive and Active Qualities,*

ſon. The other two are called Active, and they cauſe great alteration.

The Active Qualities are Heat and Cold, and the Paſſive Qualities are Drineſs and Moiſtneſs.

Moiſtneſs. When Moiſtneſs therefore exceedeth alone, it dulleth the natural Colour of Urine, thicketh and ingroſſeth the ſubſtance, and increaſeth the Quantity. And as the over-part of it above waxeth rough and troubled, ſo the Ground increaſeth and continueth raw and uncoct.

Drineſs. But Drineſs doth diminiſh the Quantity of Urine, and alſo the Contents: It maketh it thin in ſubſtance, cleer and bright, and cauſeth mean Colour, & the Ground appeareth groſſer.

Heat. Likewiſe Heat, if it exceed meaſure but little, it maketh Pale and light Saffron Colour in the Urine. But if Heat exceed greatly, it cauſeth Golden and Saffron Colour. with mean ſubſtance, and a little brightneſs; the ground is mean, in reſpect to the Quantity of Urine, but it declineth from the due whiteneſs toward Saffron Colour.

Cold. But Cold on the other ſide maketh Urine turn to white Colour, and changeth the ſubſtance from a mean. And if the Cold increaſe, the Urine will alter from mean ſubſtance

ſtance, and therefore conſequently will be either thin or groſs. If it be thin or unpure, the ground ſhall be either obſcure and little, or much, and that divers and uncon-coct.

And this is the working of theſe four qualities when they exceed alone.

But and if two of them exceed together, there may reſult of that ſort four other diſtemperances, as hot and dry, hot and moiſt, cold and dry, and cold and moiſt. Now what alterations theſe and every one of them doth cauſe the Urine, you may eaſily conjecture, if you keep in mind that which I ſaid of the four ſimple qualities, and ſo add together the alterations. Compound diſtemperatures of qualities.

And this muſt you remember therewith, that where they both agree in any alteration, they cauſe that alteration to be the greater: and where they be contrary, they cauſe the alteration to be nearer to a mean: howbeit ſomewhat to help you, take this brief declaration.

As a temperate man doth make that perfect Urine, written of before, (*in chap.* 6.) ſo the Urine of a ſanguine man (which is hot and moiſt) ſhall be yellow, or light ſaffron coloured, by the reaſon of the heat, and ſomewhat groſs, by reaſon of the moiſture. A temperate man.

A Cholerick man.

In a cholerick man (being hot and dry) the urine shall be in colour as in a sanguine man, but in substance thin, by reason of the dryness,

A melancholy man

The urine of a melancholy man (whose nature is cold and dry) shall be white through the cold, and cleer for the dryness.

A flegmatick man.

The flegmatick man (which is cold and moist) maketh urine white through cold, & thick by the moisture, for as heat and cold altereth the colours, so dryness & moisture changeth the substance. Now if you have remembred all that I have written before, then shall you be the meeter and better able a great deal to perceive the reasons of the tokens which urine doth give. And so shall your knowledge be the more certain, if you know not only the thing, but also the cause of it. Now therefore will I write of the signification of the parts of urine, particularly, that you may perceive that first, and chief commodity of urine which it worketh for mans health.

CHAP. VIII.

The significations of the parts of Urine particularly.

I Told you in the sixt Chapter of this Book what Urine was most perfect, sound, and healthful

healthful of all other. And I ſaid, that it was the rule and tryal to examine all other Urines by, ſo that the nearer that any Urine was to it, the better it was; and the further that it declineth from it, the worſe it is. This I ſaid, ſhould be as a general rule, which thing to be true in healthful men, you may perceive by that I have written already. And that it is alſo true in ſick men. *Hipocrates* witneſſeth, ſaying, *That Urine is beſt, whoſe ground is white, duly knit and ſtable, all the time that the ſickneſs prevaileth.* But *Galen* to ſupply that that is underſtood in this ſaying, and ſo to make it perfect, addeth thereto, *That it muſt be of colour party golden or pale, and of a mean ſubſtance between thick and thin.* And alſo in theſe things is required ſtableneſs, to make it a perfect Urine; for that which is unſtable in any part, in that it is not perfect.

Here were a place to ſpeak of the difference of this changeableneſs or unſtableneſs; for there is one ſort called ordinary, and another called un-ordinary, and of both theſe are there divers differences, but becauſe they depend of an exacter judgment than unlearned men can well attain unto, I overpaſs them at this time, and will declare the other differences of Urine, whereby it al-

tereth from this mean Urine, in all parts particularly.

Substance of Urine. And first I will begin with the substance of Urine, the which (as I said before) is of three kinds; thick, thin, and mean.

Mean. A mean Urine is that, that is in the middle between extream thick, and extream thin. And as it is mean between them in substance, so is it mean in signification, for it doth betoken (of it self) only good temperance and health. But the other two betoken distemperance and default of concoction, and that diversly, according to the diversity of the causes of them, as you shall now consequently hear.

Thin Urin. First to speak of thin Urine, either it doth still so continue thin, as it was first made, or else it doth shortly wax thick & troubled. That that doth continue still thin doth betoken lack of concoction, and so doth the other also; but yet this that continueth thin betokeneth more lack of concoction, for it betokeneth that nature hath not yet begun to concoct. And therefore is that water, a sign of extream crudity or rawness in nature. But that that waxeth thick after it beginneth to cool, though it betoken lack of concoction, yet doth it declare that nature hath begun to concoct already, notwithstanding

withstanding it is an evil Urine, for it signifieth that nature hath need not only of great strength to perform that concoction which she hath begun, but also that there is required long time to the performance of the same. For the which cause, *Galen* calleth this, *Of all Urines the worst.*

Thus have you heard touching crudity and concoction, what thin Urine doth signifie, so that all thin Urin betokeneth crudity. And beside that doth further betoken (as witnesseth *Hippocrates*) *gatherings or Apostumations in the nether parts of the Body*, namely, *if it continue so very long, and the patient escape death.*

Furthermore, if such thin Urine have with it a light whiteness, it is a very evil sign. For if it be in a burning Ague, it is a token of frenzinesse. But if the Patient be franſick already, and the Urine doth so continue, it doth most commonly betoken death. And if he escape death (the which is seldome seen) then shall he be long sick, & escape hardly. Thin and white.

Thin Urine also betokeneth divers other things: as the stopping of the reins, and of the water veins. And likewise, if a man have had much bleeding, or lax, or pissing, his Urine will be white and thin, and almost without ground: Like manner in old

age, and long weakneſs of ſickneſs. Alſo in young Children if it continue long, it is a deadly ſign.

Yet thin Urine, doth ſometime betoken the end of ſickneſs and recovery of health: as in Agues (namely Quotidians) if at the beginning of them and ſo after, the Urine did appear thick and troubled, and eſpecially if the colour amend therewith.

Thin and flaxen.

And if it be thin in ſubſtance, and of flaxen colour, then is it better than thin & white: for becauſe the colour is better, though the ſubſtance be all one; ſo that though it betoken ſome weakneſs & lack of concoction, yet not ſo much as doth the other, for the colour is meanly concoct: that is to ſay, natural heat is meanly increaſed.

Thin and golden.

But if it be thin and golden, it is yet more better than thin and flaxen: for the colour is more exact, and this betokeneth concoction half compleat, for that which it lacketh in ſubſtance, it hath in colour.

Thin and ſaffron.

After this is there thin and Saffron coloured, which betokeneth firſt lack of concoction, and beſide that default of nouriſhment, as in a young man that faſteth long. And ſometime it betokeneth that exceſs of heat in the inner parts of the Body, doth cauſe cholerick humors to abound, as in the Fever

Tertian.

Tertian. Beſide al this, it betok'neth thought carefulneſs, and watching, & alſo overmuch labour, and taking of heat in the Sun.

And thus have you heard the ſignifications of thin Urine, both alone, and alſo with ſuch colours as it can be coupled.

Now ſhall you hear what thick Urine doth betoken, both alone, and alſo with ſuch divers colours, as it may be coupled. Thick.

Thick Urine (which is, ſo I mean, when it is firſt made) either it doth continue ſtill thick, or elſe it doth ſettle, and wax clear. If it continue ſtill thick, it betokeneth that that diſturbance which was in the blood, that is to ſay, the rage of ſickneſs doth ſtill continue ſtrongly, and that natural ſtrength is but weak. This Urine is not ſo good as that which doth ſettle and wax clear. For that doth betoken that the diſeaſe ſhall ſhortly be overcome, howbeit there remaineth yet ſomewhat of that diſtemperate trouble in the blood, yet nature hath the overhand & expelleth the matter of the grief, & therefore is ſuch a Urine called good, but yet it betokeneth ſome lack of concoction, though not ſo much as that which continueth troubled and thick ſtill.

Alſo thick Urine (if it be exceeding thick) doth betoken death, as *Hippocrates* ſaith,

And the Urine that is thick & troubled, like Beasts Urine, doth betoken head-ach, either present already, or shortly after to come, If thick Urine appear in an Ague, where thin Urine went before, it betokeneth that the sickness will abate straightwaies, for it declareth that narure hath overcome the matter of the sickness, but if it appear thick at the beginning of the Ague, and do not wax thin in process of time, it betokeneth plenty of matter, and weakness of nature; so that there is fear left nature should be overcome, except the colour do amend.

Thick and white.

Thick Urine also betokeneth openness of the water-pipes and reins, And if it be thick and white, it betokeneth great plenty of raw humours, and sundry kinds of flegm to be gathered in the Body, and betokeneth also (namely if it be much) that those gatherings, which might be looked for in sore Agues shall not ensue, for the matter which should cause them departeth out by Urine, but the whiteness of this Urine is bright as snow. For if it be somewhat darker like the whiteness of Milk, it is a token of the Stone, either in the Bladder or Reins, namely, if such Urine chance in the end, and amending of sickness.

Grey.

But if the colour of it be grey, it betokeneth not

not only plenty of matter in the Body, but also that the whole Body is possessed with a dangerous sickness, whereof oftentimes it chanceth the Patient to break out with blisters and heat in his skin.

Next after this followeth thick Claret colour (for flaxen, yellow, nor saffron colour doth not agree with thick Urine) & it doth signifie that the disease shall continue long, specially if the ground of it be also of claret colour. But yet this disease without peril of Death. Thick and Claret.

Thick Urine, if it be red coloured, doth betoken abundance of blood, as is seen in continual Agues, and in all perillous Agues, as witnesseth *Theophylus*. If this water come by little and little, it is an evil token, for it doth alwaies declare danger. Thick and Red.

And if that sort of Urine (in such Agues) do wax troubled, so that there come with it deafness of hearing, and ach of the head, with pain in the neck, and in the sides of the belly, it betokeneth that the Patient shall have the falling evil within a seven night.

And if a thick Urine have a crimson colour if it be burning Agues, and the Patient then have the head-ach, it betokeneth that a chief critical sign either is then present, or else nigh at hand. Thick and Crimson.

But

Thick and blew. But if the Urine be thick and blew coloured, it ſignifieth diverſly, as the perſons are that made it. For in them that are in way of recovery, it betokeneth that they ſhall eſcape their grief. It ſignifieth alſo pain in the water-pipes, or elſe that the party hath run much.

And if it appear ſuch in old men, and that continue long, it declareth not only that the bladder is infected with evil humours, but commonly alſo that he ſhall be rid of them. But if it come after the grief of the ſtone, it declareth that the grief ſhall be turned into the ſtrangury.

Thick and green. Thick Urine and green, namely in Agues is a token of the yellow Jaundice, either preſent, or ready to come.

Thick and aſh-coloured. Thick Urine and aſh-coloured, if it appear in Agues & do not ſettle, it is a ſign of madneſs, but in the burning Ague, it betokeneth that the ſtrangury will come ſhortly.

Thick and black. But if a black colour appear in the Urine, it betokeneth ſometime well, as in the end of the Fever Quarten, and of melancholike madneſs, for it betokeneth that the melancholike matter, which cauſed the diſeaſes, doth avoid out.

But ſometimes it is an evil token, for it ſignifieth that either the blood is burned through

through exceeding heat, or else that natural heat is clean quenched through deadly cold, and therefore is commonly called, a deadly sign, namely in sharp Agues, if it have an evil savour. And so meaneth *Galen*, when he saith, that he marked, *The thicker that a black water is, the worse it is*, and moreover, *That he never saw any escape, which made such Urine.*

And thus have you heard of the significations of thin and thick Urine, with such colours as may be coupled therewith.

Now will I write a little of the colours alone, and of such tokens as come chiefly of them, rather than of the substance or any other part of the Urine.

The colours of Urine declare commonly, how heat and cold do reign in the Body, so that the whiter the Urine is, the greater is the cold, and natural heat less, & the higher coloured that the Urine is, the greater is the heat. Colours of Urine.

But to speak particularly, that you may perceive it the better. If the Urine be white, it is a sign that concoction faileth quite, and the lighter coloured, the worse. White.

Pale colour is better somewhat, though it also declare lack of natural heat & strength. Pale.

And flaxen colour, though it betokeneth beginning Flaxen.

beginning of concoction, yet it is not perfect, howbeit it may be well taken, if all other signs be good.

Pale, light saffron. Pale and light Saffron (as you have heard before) are the best colours, and most temperate, which betoken exact concoction.

Golden saffron. But golden and saffron colour declare excess of heat.

Claret red. Crimson. Purple. Green oily Claret is next, and then red, after it crimson, and then purple, then green, and last of them is oily Urine, which as they go in order, so they declare greater and greater heat with increase, not only of the quality, but also of the matter containing the same.

Blew ash-colour. But now of the other side, blew Urine, & ash-colour, are tokens of excessive cold, sometime with matter, and sometime without; and so likewise of black Urine, howbeit it cometh sometime of excess of heat.

But how you may know the differences both of it and all the other, now will I shew in order, with the rest of their significations.

White. White Urine, if it come in great quantity, in a whole man, it betokeneth much drinking of thin wine.

But if it be mean in quantity, with a due ground, it declareth cold distemperance of the liver. The Urine doth appear white, with a dis-form and unconcocted ground, in them that

hat have the dropſie. But in old men, white Urine is no great evil ſign, as you may perceive by that I ſaid before of Ages, how they alter Urine. But in young men, & ſuch as are of freſheſt age, it is a worſe ſign, and ſpecially if it have either no contents, or elſe evil contents. And if Urine continue long time white without changing, it betokeneth painful beating of the head, dazelling of the eyes, and giddineſs, and alſo the falling evil, lothſomneſs of good meats, and luſting ſometimes after evil meats, greedy hunger, pain in limbs, and painful moving of the ſinews, and divers griefs of the head and reins, and alſo pain in the fundament, and great weakneſs by ſickneſs, for all theſe do follow continually lack of concoction, either cold, or ſtopping of the Urines and conduct, or tranſpoſing of the humours.

But the differences of theſe cannot eaſily be known of every man, yet ſuch as are learned may gather certain diſtinctions of them by the accidents which follow diſeaſes.

Dark white colours, as milk white, white, white like horn, and grey, if they appear in the beginning of Agues, and in the increaſe of them, they do betoken much pain. But

Milk-white
horn-white
grey.

in

in the decreaſe of Agues, they declare health eſpecially if it come plentifully.

Pale flaxen. Pale Urine and flaxen, do not lightly appear in Agues, except they be eaſie Agues, and ſhort, as thoſe which continue but one day, but if that it do follow after burning Agues, it declareth that they be fully diſſolved.

Pale, ſaffron. As for pale and light ſaffron, they are (as I ſaid before) the beſt and moſt perfect colours, namely, in young men and freſh youth. But in old men, women and children (whoſe Urine, as I have ſaid, declineth toward white and pale) it doth betoken that their body is too hot, either by reaſon of their diet, or elſe of their exerciſe. But in as much as it is but mean exceſs, it declareth but ſmall grief.

Golden ſaffron colour. Golden and ſaffron coloured Urine, if it be either ſomewhat thin, or very thick, either it hath no ground, or elſe very few, and dark contents. But in this they differ, that golden Urine declareth exceſs of heat, and matter alſo, by reaſon of meats, ſharp medicines, chafing of the blood through anger, heat of the bowels, or elſe heat of the time of the year.

But ſaffron colour appeareth rather with default of matter, through ſome affection of the

the mind, watching, heat of the Sun, labour, and such like things, which increase thin and yellow choler, and diminish natural heat, so that the cause of this colour is choler it self, increased either in quantity, or else in quality. But in old men and women, and such other, there is some greater cause that occasioneth it, for it signifieth an Ague cometh of saffronly choler dispersed through the whole body, after which there followeth commonly giddiness, head-ach, bitterns of the mouth, loathsomeness of meat, thirstiness Also in young men, such Urine is caused through much exercise, & use of hot meats.

Of Claret and Red Urine.

Claret Urine.

CLaret & Red Urine is coloured either of the mixture of red choler, or else of the corruption of blood; such Urine oftentimes goeth before Agues. For when the blood doth so abound, that it cannot be duly laboured, nor can take no air, there is engendred a certain corruption, which as it is red of colour it self, so it causeth the Urine to be red in colour if it be much, else it maketh only Claret colour. But if it be exacted like grain, it betokeneth that blood issueth into it, out of some veins nigh to the reins, which

which either are broken, or otherwaies opened. But how it may be known from whence it cometh, and how, there are many means to search, but becauſe they are not light to perceive, I will reſerve them for Phyſicians that are learned. This colour of it ſelf is no great evil ſign, namely in young men, for it betokeneth exceſs of blood which may well be born of them. But in old men it is a very evil ſign, for it betokeneth either long ſickneſs, or elſe death, ſith nature is ſo weak that it cannot keep in her natural humour. And if that red colour, come of red choler, as it doth in young men, for the moſt part and not of blood (which thing a learned Phyſician may conjecture partly by the former diet, and other ſigns more) the accidents ſhall be the more troublous; howbeit yet not ſo evil, as when it cometh of ſaffron or golden choler, for this cauſeth greater thirſt, & more troublous ſleep than the other.

Of Crimſon Colour.

Crimſon colour.

CRrimſon colour is a token that the good humours of the Body are burned, and turned into red or black choler, which cauſe worſe griefs than the other; howbeit if it

have

have a good ground, the grief is the more moderate: But if it have either no Contents for a ſpace, or elſe evil Contents, and the Urine appear like a thick Myſt, but ſomewhat gliſtering light, it is a ſign that nature needeth ſuch ſtrength ro recover her ſelf to her own ſtate. Notwithſtanding ſuch Urine is cauſed ſometime in whole folk, by reaſon of much labour, and long journying, and then hath ſome good ſigns therewith. But in them that have a ſharp Ague, ſuch Crimſon Colour of Urine doth betoken that corrupt Blood doth abound, and that it doth putrifie, and turn into Choler. And commonly they that make ſuch Urine, do thirſt much, and are dry in their mouth, and are troubled in their ſleep, and feel ſharp Agues, and are half diſtract, and feel pain of the Liver with coughing.

Howbeit, yet theſe ſigns may be ſometimes as well good as bad, aceording as the Colours do change to better or worſe.

Of Purple Colour.

PUrple Colour declareth need of much ſtrength before it can be altered to a good Urine. *Purple Colour.*

This Urine is a ſign of burning Choler. And if it do continue very long, it is a token

of the Yellow Jaundice, with abundance of groſs and corrupt Choler, gathered in the Liver, and at the beginning there goeth with it ſome Spices and Grudgins of the Ague, with a little Thirſtineſs, but unleſs there be diſcretion uſed in the Diet of ſuch a Patient, it may turn to a much worſe Diſeaſe.

Of Green Urines.

Green colour.

GReen Colour is an evil and a dangerous token, for it needeth not only long time, but alſo continual ſtrength to bring it again to a good Trade. The higer that this Colour is, the more it declareth that Choler exceedeth the other Humours, which if it be any more burned, will cauſe Black Urine, of which I will anon ſpeak. But if Green Colour come of waſting of the Fat, then is it ſomewhat like to Oily Colour, or Popinjay-green: but if it come of abundance of purpeliſh Colour, and through increaſe of his quality, then doth the Colour incline more toward Black, & gliſtereth with ſhadowy-green, drawing very nigh unto Black. After Green Choler followeth madneſs, parbreaking, and avoiding of Choler, ſometimes with Matter, or elſe burned: and alſo continual Thirſtineſs, and burning heat of the Tongue, ſtraight-

ſtraightneſs about the ſtomack. And like other things. But if the Patient continue ſtrong, and the Colour of the Urine do wax lighter, there is good hope, elſe there is great fear, leaſt of the Dryneſs and Burning, there do follow Contraction, of the ſinews, which will kill the Patient

Of Oily Urine, or Popinjay Green.

Oily Urine is of three ſorts, as I ſaid in the fift Chapter, that is, light Oily, ſtark Oily, and dark Oily. Oily Urine, or popinjay green.

Oily Urines are a token of unnatural heat & the higher that the Colour is, the greater is the heat. And alſo they betoken melting of the fat within a man, for of it are they ſo Coloured. But at the beginning when there is a little fat melted, the Urine is light Oily. For if it look ſtark Oily, then it ſignifieth that the Diſeaſe increaſeth. But if it come once to dark Oily, then is the Diſeaſe ſore increaſed. *Hippocrates* in the ſeventh Book of his *Aphoriſms* ſpeaking of fatneſs in Urine, ſaith thus: *Who ſo maketh Urine with fatty ſtates coming much and faſt, they have ſharp pains in the Reins.*

Which ſentence though it ſeem more to appertain to the contents than to the colour

yet doth not only *Galen*, but also *Aitius*, *Actuarius*, and also another *Grecian*, (whose name I know not) expound it amongst Colours: and by it declare the differance to know whether that waſt or melting of fat be in the Reins it ſelf, or in other parts of the Body, For if it come faſt together, (as *Hippocrates* ſaith) then cometh it from the Reins it ſelf, and betokeneth the waſting to be in them. But if it come ſoftly and increaſe by little and little, then doth it declare that the whole Body is overcome with unnatural heat, and that the fat of it doth waſt: it doth betoken (as *Act.* witneſſeth) a waſting Ague, conſuming the Body.

Of Blew Urine, Aſh-colour, and Black.

BLew Colour, Aſh-colour, and Black, do differ only in lightneſs & darkneſs. For Aſh-colour is darker than Blew: and Black is darker than any of them both.

Blew Colour. Blew Colour ſometime cometh of moderate Melancholy, & then is the Urine ſomewhat thin in ſubſtance. And ſometime it cometh of great cold, and then it is thick in ſubſtance. And ſometime it is a token of mortifying of ſome parts. Yea, and ſometime even of whole nature: namely, if the colour change to worſe and worſe, and there went

before

before no token of Concoction.

Aſh-coloured Urine cometh of like cauſes and betokeneth like things. Howbeit it is ſo coloured many times, when the party that made it, hath been ſore beaten and bruiſed. But in this you need not the help of Urine, for you may ſee the walts and tokens of the ſtripes in his Body. Aſh-colour

Urine which is extream Black, ſometime betokeneth extream heat, and ſometime extream cold, the which both you may diſtinctly diſcern, if you do obſerve order of alteration in the Colours of the Urine that the Patient made laſt before. For if his Urine before were Green, or like thereto, then doth the Black Urine which follows it, betoken extream heat. But if it were laſt before Blew, or Aſh-coloured, then doth it ſignify extream cold. This Black Colour though it be commonly an evil and deadly ſign, as I ſaid before, (ſpeaking of thick Urine and Black) yet ſometime it is a good token. Black urine

For in all Diſeaſes lightly that come of Melancholy Matter, it betokeneth that the matter doth avoid, & ſo the Sickneſs to end. And ſuch Urine doth appear many times after Purgations or other meats and drinks which purge the Splene; namely, if a man do labour upon them, that was before diſeaſed of the Spleen.

Howbeit, ſometime Meats and Drinks of like colour cauſe black Urine, as *Galen* witneſſeth namely, *after dark Red Wine, & Allegant.*

But in moderate Agues, if ſuch Black Urine do appear, it is a token of Death, except it be on ſome Critical dayes. And likewiſe in ſharp Agues, eſpecially if the ſavour be ſtrong and ſtinking: unleſs it come of ſome grief of the Bladder.

Quantity of Urine. Let this ſuffice for this time, as touching Colours. Now for the quantity of Urine, as when it is mean, it is a good token: ſo when it is either too much, or too little, it is an evil ſigne, except it come of ſuch cauſe, (as I ſhewed before) that altereth Urine in a healthful man.

Much in a whole body As firſt exceſſive quantity of Urine, cometh of much Drinking of thin Wine, as Reniſh Wine, and ſuch like. But that ſhall you thus know: for the Colour will be whitely, and the ſubſtance thinner then a mean: the Contents alſo will be divers, and not duly knit. Likewiſe if there be abundance of raw Humours in a man unconcocted, and yet nature perſevering ſtrong, then is there great quantity of Urine, and ſomewhat thin of ſubſtance, but not ſo white as the other, and the Contents of this are better. Alſo

4 Ap. 3. (as *Hippocrates* ſaith) *much Urine made in*

the

the night, is a token of small sege; so that if any impediment let natural sege, then will the quantity of Urine be the greater. But in this as the Colour is mean, so is the ground both greater and grosser, yet in healthful folk may the Urine, by another means also be greater than a mean, and that may be by Medicines which provoke Urine, but then is the Colour more natural than the last that I spake of, and the ground is thinner of substance, so that it is dark and scarcely seen, and then is there a certain glistering in the Urine it self.

Now contrariwaies, and of contrary causes cometh small quantity of Urine. For it cometh sometime of lack of drink, or dry meats, and then is the Colour light Saffron, with a small ground, but yet somewhat gross. Also both Meats and Medicines that are Clammy, & apt to stop the water-pipes, do cause little Urine, but then is the ground also little and thin. Little urine in a whole Body.

Besides these, much sege causeth Urine to be lesser, for if the one Excrement be greater than nature would, the other must needs be less, if the Body be healthful. In this Urine as you may partly know the cause of it by the knowledge of the excessive sege, so will the Urine it self be thinner, and the ground very

dark, thin, and not duly knit. And thus many waies may this alteration appear in a healthful Body.

Much urine in a sick body.

Now in a sick Person, much Urine either betokeneth the Dropsie, and then is it like water, with a raw and diverse ground, or else if it be white, thin, and without ground, then doth it betoken the Pissing evil. And this Urine (as witnesseth *Galen* in his first Book of Judicials) *is the worst of any other of like sort*, I mean which declare lack of Concoction, for it declareth the decay, yea I may say, the utter extinction of two natural powers, that is, the Retentive power and the Alterative Power also.

Diabete.

Much Urine, in Colour fiery, & light Saffron, or of any like Colour, it is to be feared, namely, if it be coupled with evil Contents; But if it be of Crimson or Purple Colour, and so proceed, especially if no Concoction went before it, then doth it encline to evil, and betokeneth a certain mortifying & wasting of the whole composition of the body.

But if much Urine come in an Ague, namely toward the end, and that there went before it little Urine, thick and ruddy, then is that a good token, as witnesseth *Hippocrates* for it betokeneth the Ague to be at an end. And this Urine will be white and thin

4 Aph. 6. 9.

mode-

moderately, and will have a mean ground.

Now little quantity of Urine, with a gross ground, unduly knit and Unconcoct, is an evil token; for it betokeneth the weakness of the Alterative Power, which is not able to Extenuate, Concoct, neither alter the matter, and therefore doth it with much difficulty pass forth in such grosness. Howbeit if there follow after it a more thinner Urine, with the ground well and duly knit, and stable, then is it without fear. For this latter Urine (as you heard before) is a token that the cause of the other is overcome and vanquished. *Little urine in a sick body.*

This little quantity of Urine cometh sometime in vehement Agues, and then is the violent heat, cause thereof. Sometime also it cometh of the stopping of the Water-pipes, not only through clammy Meats & Drinks, but also of some disease or grief in them.

And this now shall suffice for an Introduction, as touching the substance, Colours, and quantity of Urine.

It followeth next, to speak of the Contents which so greatly help to the right judgment of Urine, that *Hippocrates* (in his second Book of Prognostications) doth by them only; yea, & that by one of them (I mean the ground) pronounce the Judgment *Contents.*

of

Sediment. of a perfect Urine; saying, *That that is the best Urine, which hath his sediment or ground, white, duly knit and stable, and that continually all the time of the sickness.*

Now seeing this great Clerk and Father of Physick, doth thus esteem the ground, it shall not seem unmeet, that I orderly do write briefly of those principal things that are to be considered, as touching the Contents; and first of all of the Ground, which hath alteration (as you have heard) both in Substance, Colour, and Quantity.

But now as touching the Substance: then is it only mean, when the third Concoction in the veins is perfect. For the ground is the excrement (as you might say) of that third Concoction, and is like in form to Matter, save that it is more duly knit together then is matter, and doth not smel so evil as it; or else you may liken it to thin Fleam.

Gross ground. This Ground is then gross, when the veins are repleniſhed with raw Humors. Howbeit this grosness or thickness is not alwaies an evil token; for sometime it is a sign that Nature hath prevailed against the crude Humors which caused diseases, and doth expel such superfluous Excrements. And that shall you discern by the goodness of the Colours, and also if it come in the declining

clining of the ſickneſs: for if it come at the beginning, either to the increaſe of the ſickneſs, then are they to be ſuſpected as evil; eſpecially if they bring with them evil Colours.

A thin Ground, being alſo pure, and ſo cleaving to the bottome of the Urinal, that it will not lightly riſe, though the Urinal be ſhaked, it is a token of great weakneſs of nature in the third Concoction, and ſuch a Ground appeareth moſt in white and watry Urine. Howbeit ſometime a thin Ground cometh by the reaſon that the raw humours are extenuate through natural heat, which getting new ſtrength, doth extenuate and diſperſe all groſsneſs of raw Humors within the veins. For the property of heat, is to knit and bind together thin things, and to extenuate and diſperſe groſs and raw things. Thin ground.

Now as touching the Colours of the ground, the perfect ground is neither exceeding white, neither yet pale, but mean between both, for if there appear any ſuch exceſſive white, then is it ſome rag of Phlegmatick matter, or elſe matter extreamly Concocted, which cometh from ſome inward member being ſore; and that you may diſcern (as I ſaid before) by the toughneſs, and by the ſavour. Colour of the ground

And

And if any man be desirous to know the cause why the Ground is white of Colour, let him remember, that the Ground is the superfluous Excrement of the Blood being perfectly Concocted in the Veins. Now that the Blood it self, when it is exactly Concocted, is turned into a White, or at least, a party White Colour, you may conjecture by the generation of milk, & also the seed of man, yea, and of matter, which all three are nothing else but Blood, exactly Concocted, save that matter cometh of evil Blood.

And therefore whensoever the Ground hath in it any other Colour than White it is no good token: As first, if it be pale and flaxen coloured, then it is swarved from his right and commendable Colour. Howbeit, yet it may be born as but meanly evil, because that that Colour cometh of small excess of Choler.

Pale.
Flaxen.

But if it be more higher coloured by Choler, so that it be Saffron coloured, then is it an evil token (as *Actuarius* saith) for it declareth that choler is excessively increased either by the order of Diet, or else by the Corruption of Blood, or some other waies. Howbeit *Hippocrates* in his *Aphorisms*, seemeth to say the contrary; for he saith, *That when the ground is so Colou-*

Saffron: *Actuarius.*

7. Aph. 32.

red

red of Choler, especially if at the beginning of the Sickness it were watery to sight, then doth it betoken a quick sickness; that is to say, as *Philotheus* expoundeth it, a sickness that will shortly be ended, and so it may justly be called a good sign. Notwithstanding as in this point it is a good token, in that it signifieth that the Disease is nigh the end, so it may be called (as *Actuarius* calleth it) an evil sign, because it doth betoken a Cholerick sickness, and that Choler doth unnaturally abound. *Philotheus.*

And if this Answer do not content you, (though it content *Antonius Musa*) then may you say more better (as I think) thus: That if the Ground be at the beginning of the sickness Coloured with Choler, and so increase (as *Actuarius* seemeth to mean) then is it an evil token indeed, for it declareth both the abundance, & also the increase of choler. But if the ground, at the beginning of a Cholerick disease were watry, that is, white and thin, & afterward turn to Saffron Colour, which is the exact Colour of Choler or else to a Yellow Colour (which is somewhat less Cholerick) then is it a token that the Cholerick matter, which before lay lurking in the Body, doth now begin to avoid; and so the cause of Sickness, *Antonius Musa.*

thus

thus by nature expelled, health must needs follow.

As contrariwise, if after Yellow or Saffron Colour it change unto whiter, & there be no certain token of Concoction, then it is an evil sign, and a token of Phrenzy. Howbeit, if there be any token of certain Concoction, then is the same a good sign, so that if you take heed, you may perceive here what a necessary thing it is to observe order in the alteration of Urine, of which I have partly spoken before.

Claret colour. Red Bloody.

Now therefore to go on: If the Ground be of Claret Colour, either Red or Blew, the token is not good. For these Bloody Colours come either of too much abundance of Blood, or else by reason that the retentive Power is so feebles that it cannot keep in the good Humours, but suffreth them to run out.

Claret red.

Claret Colour and Red, do betoken a certain default of Concoction in the Veins, and that through the excess of Red Choler. But yet this default is but mean and without danger, seeing that the hurt is only by quantity, whereas some other do hurt both by quantity and quality also.

Bloody.

Bloody Grounds are altogether worse than Red (though they be better than Ash-colou-

coloured, and Black) for they betoken that the Blood is nothing duly wrought, especially if their quantity be much, withal, for then the quantity of Matter doth let the Powers to work, which thing yet as it may be born, so it declareth need of long time to recover health.

But if this do come through weakness of the Powers in themselves, then is it an extream evil sign, for it betokeneth that the Powers are overcome with weariness in working, and be not able to keep in the good and profitable Humors. Which thing to discern more exactly, you shall take artificial Conjecturers by other circumstances, which give also tokens of Judgment, namely, as by the Age of the Person, by his order of Dyet, and such like.

Now to make an end with the other Colours which are of a dark hew, as Blew-ash-colour and Black: These of all other are the worst, and most envious to Nature, and the nearer they cleave to the bottome of the Urinal, the worse they are. *Blew, Ash-colour Black.*

These Colours come of a Black Melancholy Humour, being ingendred within the veins, or else coming from some other part into them: or else it betokeneth deadly mortifying. But sometimes it cometh of fore-

fore bruſing and ſtripes, and generally it cometh (namely the Black) either of exceſſive cold, or exceſſive heat.

And now for a Concluſion, whatſoever I have ſaid of the Ground, you ſhall underſtand the ſame to be ſpoken of the Swim, and the Cloud; for they are in kind but one thing, ſave that they differ in lightneſs and heft, and therefore alſo in places: But the Judgment of their ſubſtance and Colour, is much after one rate, though ſome difference there be, as you ſhall hear hereafter.

Quantity. And likewiſe of their Quantity, which as it is then only commendable when it is mean, ſo if it be greater than a mean, it doth declare ſome alteration in man, though not alwaies extreamly evil, for ſometime it is a token of fatting, or growing to a corporateneſs, and that it doth ſignifie, if none other evil ſign be coupled with it. For though the perſon feed much on nouriſhing meats, and that with reſt and an idle life, yet natural heat appeareth ſo ſtrong, that ſhe can eaſily Concoct ſuch meats. According to this ſaith *Galen* in his Judicials, That the plenty of the Ground in Urine betokeneth certain and exact with Concoction: And that as the Body is repleat with crude Humours, ſo it declareth that thoſe ſame be

Great.

in expelling out at the preſent time. And for this cauſe (ſaith he) in all Children commonly, and in Men alſo which feed much, or be of ſome other cauſe replete with Humors, their Urine hath a great Ground.

Alſo oftentimes it chanceth the Pores of the Skin to be ſtopped, ſo that ſuch Excrements as were wont to paſs out by them, are inforced to ſeek a new Paſſage, which they find moſt ready by the Urine, and thereof are the Contents, and namely, the Ground oftentimes encreaſed. And all theſe wayes chance in Health. But in Sickneſs, it chanceth many and groſs Superfluities do appear in the Urine, as often as the Natural Powers, namely, the Alterative or Concoctive Power being weakned, and Crude Humors paſs out undefied.

So doth it chance (as witneſſeth *Alexander Trallianus*) *that the Urine of them which have the Collick, is Flegmatick and hath a great Ground.* But if the Contents be either Great or Groſs in the beginning, or in the augmenting of Sickneſs, (namely if the Patient have a notable Ague) it argueth abundance of Humors, to the Concoction of the which there needeth both ſtrength of Natural Powers, with time and good ſpeed. Trall. 2. cap. 33.

Little Contents.

And now contrariwaies must you judge of the smallnes of the Contents, for they be caused either of great Labour, long Fasting, Stopping, or Obstruction of the Veins, and such like parts, or else of slackness of Concoction. And (as *Galen* saith) when the Body is replere and with crude and raw Humors, then is the Ground great, but if the Body be repleniſhed with Cholerick Humors, then is there in the Urine either little Ground or none at all; but in such case it is well, if there be any sublimation or swim.

Gal. 2 pref. Hip. 26.

Urine without ground

Now seemeth the place most meet to speak of such Urines as have no Ground at all, nor other orderly Content, and that will I do by the order of the Colours of the Urine, according as *Actuarius* proceedeth.

The Urine that is very White, and exceeding thin, and so lacketh the Ground, doth betoken either some notable Obstruction, either immoderate cold, or else Crudity and lack of Concoction. And as these tokens may be greater or lesser, so shall the things which they betoken be judged in like rate, either more, or lesser.

But if the Urine be pale Coloured, or flaxen, and then lacketh Contents, as it doth declare lesser Obstruction, so it doth signifie as great Crudity, as the other before.

And

And ſo ſhall you judge of Urine this is Yellow or Flaxen coloured. For in them appeareth, that natural heat doth prevail. Notwithſtanding ſuch things (I mean the default of the Ground with thoſe Colours) may chance (as often they do) through vehement Pain, immoderate Labour, long Watching, and alſo default of Matter.

But ſuch Urines as be higher Coloured then theſe that I have named, by their Colours they declare the Qualities of the Humours which do prevail: and alſo betoken certain putrefaction, and crudity in the Veins.

It chanceth alſo ſometimes, that ſome gathering fore being in ſome of the principal Members, by his unnatural heat withdraw hither the Matter (even as it were by cupping) & ſo doth cauſe the Urine to have no Ground. And though, indeed, it is never a good token to lack the Ground in a Urine, yet it is leſs to be complained of, if the Colour and ſubſtance draw nigh to a mean; for in ſuch a caſe it betokeneth, that though nature be ſomewhat ſlack, yet will ſhe ſhortly gather ſtrength, ſo that there ſhall appear a Ground in the Urine.

Now to ſhew you the reaſon, why it chanceth no ground to appear in the Urine: Firſt

in case of Crudity, when there wanteth perfect Concoction, there must needs want also the Contents in the Urine; for they are Excrements (as you might say) and the superfluities of the third Concoction. Likewise though Concoction be perfect enough, yet may there want the Contents, if there be any notable obstruction or stopping of the Veins, namely, seeing the Contents are somewhat gross of substance, and therefore unable to pass, if the way be any thing stopt.

After the same sort shall you judge of long fasting and default of Meat, and moreover of such Meats as are unapt to Concoct. For in all such cases, there can be engendred few or no Contents.

And contrariwise, though Nature do work many superfluities, yet if the Womb be so loose that it yieldeth many Seges, then as the Urine shall be the lesser, so shall the Contents be few or none: for Nature then doth expel by Sege, those superfluities which should cause the Contents.

And likewise, when there is in any part of the Body an inflammation or excessive Heat, which doth draw Matter to it, either that any of those parts are weak, unto which Nature is wont to expel such superfluities; for in all such cases there may want the

Ground

Ground, and the other Contents in the Urine. And as for ſome of them (I mean crudity and opilation) they may be well enough born withal, unleſs their continuance be long. But now again, there is great difference touching the time of the Sickneſs in which it chanceth, for in the beginning and increaſe of ſharp Agues, if the Ground be lacking, it betokeneth great weakneſs of natural ſtrength, which if not prevented, may continue unto the chief ſtrength of the Sickneſs. And after ſuch a Urine, there doth follow much waking and diſquietneſs, half madneſs and trouble of mind, and all thoſe ſhall be according to the greatneſs of the Ague, either extream or mild. And ſometime it is a token that there ſhall be a gathering Sore in ſome part of the Body, namely, if other agreeable cauſes come therewith, as a Winterly diſpoſition of the Air, with an uncertain ſtate of Sickneſs, and unconſtant alteration, and mean weakneſs of the Patients Power. But in the Declination of the Sickneſs, ſuch Urine ought not greatly to be blamed, for then hath Nature eſcaped the brunt of Sickneſs, though ſhe be yet weak. Yea, and in the chief ſtrength of Sickneſs (as well as in the Declination) it may ſeem no ſtrange thing, if nature (as though

ready she had the over-hand) do gather her Power together, and draw a little nourishment to her self, and thereby causeth little or no Ground to appear. But afterward when she is somewhat refreshed, and doth more liberally nourish the Body, then doth she shew forth Contents in the Urine. And lightly the order of the Contents is such, that first there appeareth a Cloud, which afterward doth gather more strong and weighty substance, and doth become a swim or sublimation: and last of all, when it hath gathered a right natural Whitness, and due substance, then will it grow to a Ground.

CHAP. IX.
Of Differm Contents.

OTher things should I here speak of, as touching the Judicial of the Contents, both of their stableness, that is, their continuance in good form, and of their due knitting, being neither tattered, nor dispersed, nor yet overmuch clodded together. But because the exact judgement thereof exceeneth the capacity of mean wits (for whose sake I have written this Book) and cannot lightly be perceived of them, but by the Instruction

ſtruction of a lively voice, I will for this time overpaſs the exact and perfect Declaration of them reſerving it to a place more due: And now will I briefly over-run the other things which remain to be conſidered in Urine, but yet not without ſome mention of thoſe other, as occaſion cometh: and firſt thoſe Difform Contents which occupy the place of the Ground, and therefore take his name alſon. Difform Contents

Of this ſort there are four principal: the firſt is in bigneſs of a ſmall Fatch, and red Coloured, which you may call therefore red Fatches, becauſe of their likeneſs. Theſe (as witneſſeth *Galen*) *are ingendred of the Conſumption and waſting of the Fleſh when the fatneſs is already melted away.* But in this there is great difference, for ſometime it is only the waſting of the Reins, and ſometime of the whole Body: as if there appear in the Urine tokens of due Concoction, then is that waſt in the Reins only. But if there appear in the Urine default of Concoction, (namely being great) or if the Patient have an Ague, then is it the waſt of the whole Body, and that ſtandeth well with reaſon, that when it betokeneth the waſt of the whole Body, there muſt needs appear default of Concoction; for in ſuch caſe thoſe Red Fatches 6. Epid.

parts which are the Instruments of Concoction are so weakned, that they cannot do their office. These Contents, by reason that they are gross and heavy, therefore they appear alwaies in the bottom of the Urinal.

Branny Contents

Other difform Contents there be also, of which some are like Bran, and some like Scales. And of those that are like Bran, there is one sort Smaller, and another Grosser, the Smaller sort is like the Bran of Wheat that is finely Ground, and those may I call fine Bran. The Grosser is like Bran of Barley, or of evil Ground Wheat, and may therefore be called Gross Bran, for it is thrice as big as the other.

Fine Bran.
Gross bran

Scales.

The third sort which is like Scales, hath no notable thickness, but only breadth and length. These three do betoken waste of the strongest parts of the Body; but yet not all alike, as *Hippocrates* doth declare in the Second Book of his *Prognosticks*. Howbeit, because that place of *Hippocrates* is so difficult, that scarcely the great learned Men can agree thereon, I will not now meddle therewith, but will write *Altuarius* mind of those three.

When the Ague (saith he) *is grounded in the bottome of the Veins, then there appeareth such fine Bran.* Howbeit, sometimes

Fine Bran.

it

it is a token of the only grief of the Bladder being Scabbed, as witnesseth *Hippocrates*, 4. *Ephor.* 77. But then hath the Patient no Ague, and again, there doth appear tokens of Concoction in the Urine. But when it cometh of the whole Body, this is the Cause thereof; the Ague getting Power and prevailing unto the hard parts of the Body (as in those Agues which are called Fevers Hectike) then in the striving between those parts and the Ague, the Ague having the mastery, doth by his violence raise of such branny scurffe. For the nature of fire (whose operation the Ague hath) is to work according as the Matter is that it findeth, either to melt it, if it be a liquid & unctuous thing, either else to Scale it and Fret it, if it be hard and unpliant, and the harder that the Matter is, the greater Scales it Fretteth off; which thing you may see by daily experience, how fire melteth Wax and Tallow, and such like turning them into Liquids: whereas of Iron and of other Metals, it maketh Scales and not Liquor. Scales.

But when the Ague hath attained and overset, not only the substance of the Veins, but also the strong parts of the Body, and doth Melt and Waste them, then doth there appear in the Urine, Scales, broad and

and thin, which you ſhall know to come of the whole Body (as I ſaid of the other before) if the Patient have an Ague, or there appear default of Concoction in the Urine: elſe if theſe two be abſent, it may come of the bliſtering of the Bladder, as *Hippocrates* witneſſeth 4. *Aphor.* 81. & namely, if there be in the Urine an evil ſavour withal.

Groſs bran

Now to ſpeak of the great and Groſs Bran, which as it is much greater than the other, ſo doth it declare a greater ſtrength of the Ague, and that in the whole Body, and all the parts of it, enflaming and burning the whole ſubſtance thereof, and therefore is it not only the worſt of them all, but is nigh unto a deadly ſign, and that either by the waſt and conſuming of the great and ſtrongeſt parts of the Body, or elſe by the burning or drying up of the Blood. Which two things you may diſcern a ſunder by the Colour of them. For if they be red, then come they of the burning of the Blood; but if they be White, then come they of the waſt of the ſtrongeſt parts of the Body.

Note.

Hippoc. 7. Aphor. 31.

Of this kind of Contents ſpeaketh *Hippocrates* ſaying: *In whatſoever Agues there doth appear Grounds like unto Groſs Bran, it is a token that the ſickneſs ſhall continue long.* Which ſaying, *Galen* doth underſtand

ſtand ſo to be true, *If the Patient have ſufficient ſtrength to continue with ſuch ſickneſs, elſe it may be a ſign rather of ſhort life, then of long ſickneſs.* For as that token is commonly deadly, ſo thoſe few that do eſcape, do recover hardly, and not without the long ſufferance of the violence of that cruel Ague.

Now as touching the foreknowledge of it, whether the Patient may endure with it or no, that ſhall you gather of the multitude, order, and ſtableneſs, or unſtableneſs of it. For if they be many in number, and proceed to worſe and worſe, then it is an evil and mortal ſign, and doth declare that Nature is wearied and doth quite faint thorow the waſt and decay of the whole conſtitution of the Body: But contrariwiſe, if they appear few, and do alter continually unto leſs evil tokens, then is there good hope of Health. And this ſhall ſuffice as touching theſe.

Now to ſpeak of the reſt of the Ragged Scraps, Hairs, and other like: Firſt you ſhall underſtand, that ſometimes a good Ground is coupled with certain evil and unconcocted Fragments of all ſorts of Humors, for ſometime there appeareth with the Contents certain Ragged Scraps, enclining Ragged Scraps.

in

in Colour toward a Yellow, or a White, or else some such like, if those appear in great Quantity, they declare the Matter to be half unconcocted, and that the Humor (whose Scraps they are) doth abound in the depth of the Body, and is as dust or burned; but if they be few, then declare they the Malice of the Humor to be milder, and that the use of evil Meats doth cause them: the greater that such Ragged Scraps are, the lesser Adustion of Humors they declare to be in the Veins, and the lesser they be, the greater heat they do betoken. For the cause of such Ragged Scraps is excessive heat, which doth turn those Humors into a thickness, and as it were a bony Nature, by reason that they have remained long in certain Veins, and were neither dissolved, nor extenuated, nor yet quickly expelled by Urine.

Haire

Besides these there are Hairs of sundry lengths, some an inch, and some an handful long, some longer, and some shorter; and these are in Colour Whitely, and do betoken grief of the Reins. These are ingendred in the Water-pipes, which go from the Reins to the Bladder, so that as long as those Water-pipes are in length, so long may those Hairs also be, which are a gross and baked Humor, wrought in form of a Hair.

Of

Of thoſe ſpeaketh *Hippocrates*, ſaying; *In whoſe Urine ſoever there doth appear little pieces of fleſh, either as it were hairs, thoſe ſame come from the Reins, namely, if the Urine be thick.* Howbeit theſe are ſometimes ſeen in ſuch mens Urines as feell no grief in the Reins, but only have fed ſome contiuuing ſpace on Flegmatick Meats, which will prepare Matter to ſuch Diſeaſes, as they do alſo to many other griefs, of which to ſpeak in this place it is meet. 4. Aph. 76

But to go on with this thing that we have in hand, beſide ſuch Ragged Scraps and Hairs (as I have ſpoken of) there appear ſometimes in the Ground of the Urine, and alſo diſ-parkled abroad in the Urine it ſelf, ſundry & divers kinds of Motes (as it were) which do declare that there is grief diſperſed in ſundry parts of the Body. Motes.

And this now may ſuffice, as touching Contents of every kind: Therefore now will I a little repeat out of *Actuarius* of the diverſity of Judgment, by the places or Regions or the Contents. The place of the contents.

That Ground which fleeteth nigh to the bottom of the Urinal, being in other points alſo good and mild, doth betoken no ſtrange thing. But if it be uneoncoct and deformed it betokeneth default in Nature. And if his The lower Region.

parts

parts be disparkled a sunder, it betokeneth a dimness in Nature, which doth not resist the rebellion of noysome Humours, so that in such case there appeareth need both of long time, and also more strength to overcome that evil. But as it is commendable that the Ground fleet nigh the bottome of the Urinal, so is it discommendable if it lye flat on the bottome of the same.

The middle Region. Now as touching the swim or sublimation, if it be good in Colour and otherwaies then doth it differ only in place from a right Ground, and that cometh of an unnatural Windiness, which maketh it to be so light, and to fleet above his due place, but if his Colour and other like points be evil, yet then doth it betoken less evil, then if it were in the right place of the Ground.

The highest Region. But now as touching the third and highest Region, which is the place of the Clouds. If there appear a light and thin Cloud, it betokeneth no small grief of the Head. But this difference is there in the Clouds, the better that they be in Colour and substance the farther they differ from a right good and natural Content. And therefore need they long time to return thereunto. And contrariwaies, the worse that they are in Colour and substance, the less they are to be

blamed

blamed, by reason of their place, which is so much distant from the natural place of Contents. For this is a general rule: The lower the good Contents fleet in the Urine, (excepting alwaies such as cleave to the hard bottome) the better they are. And contrariwaies of evil Contents and such like, the higher they fleet, the less evil they betoken.

Now to make an end of this. You shall observe a certain Proportion that is between the parts of the Urine and the parts of Mans Body. The highest part of the Urine doth betoken, the highest part of the Body, namely the Head, and such other near unto it. The middle Region of the Urine doth represent the middle parts of Man, as the Breast, the Bowels, and the parts about them. The nether Region of the Urine doth purport the lowest parts of Man, from the Bowels downward. And if you mark well this Proportion, you may the easier judge the griefs of the parts of man.

The proportion of the Regions, to the parts of Man.

For when the Contents which in Colour and substance are Natural, and yet by the abundance of Windiness be lift up to the higher part of the Urine, it declareth some great pain to be in the Head. And in like manner, when the swim or sublimation doth

doth declare grief, that grief must be lodged to be in the middle-most parts of Man (as I said before) and so of the other.

Again, as this Proportion between the Regions of Urine, and the parts of Mans Body doth declare that place, in certain height, so doth it in breadth also by like proportion if you do duly mark the side, unto which the Contents do decline.

And if you mark well what I have said, you may perceive the only cause of most such griefs, when the Contents is only disordered in place, eometh of an unnatural Windiness, but yet commonly annexed with Phlegmatick and Unconcocted Matter.

And as Windiness doth cause disorder in the Contents, so it causeth also another kind of things not to be neglected in Urine, and that is Bubbles: which sometimes flote in the Ring or Garland only, and sometimes in the middest of the Urine only, and other times do cover the whole face of the Urine.

Bubbles.

The Bubbles which stand round about over the Garland only, & continue without parting, if they be of the same Colour that the Urine is, they declare great pain to be in the Head, and that in all parts of the Head, if the Bubbles joyn together without parting. But and if they Occupie only the one half

half of the Garland, then is that pain in the one half of the Head. And ſo forth may you judge by like Proportion.

But if they do part in ſundry places, and joyn not all together, it is a token that the pain is the leſſer, and cometh of a weaker Cauſe. The more Yellower that their Colour is, the greater they declare the Pain in the Head to be. If they be White, or rather Whitiſh, and ſtand about in the compaſſe of the Garland, they betoken little Pain or none. And if the Urine be thin withal, they betoken Weakneſs of natural Heat, or elſe the Opilation and Stopping of the Reins, namely, if there appear no Ground in the Urine. This doth *Hippocrates* witneſs, ſaying; *When in the Urine there ſwimeth Bubbles, they betoken Grief in the Reins*: And alſo that it ſhall long continue. The reaſon of the long continuance (as *Galen* and *Philotheus* do both declare) is, becauſe that the Grief cometh of cold and tough Phlegmatick Matter, which alwayes is long before it may overcome. *Pliny* alſo ſaith, *that that Urin is evil, which is full of Bubbles & thick*, in which if the ground be white, it is a token that there ſhall be Grief either about the Joynts, or elſe about the Bowels. Howbeit, yet ſometimes the Bubbles are not

7. Aph. 18

Lib. 28. c. 6

an evil token, but contrariwise, a good token of Concoction, and declare that Nature doth now apply her self wholly unto Concoction. And this to the Bubbles signifie, when they appear in the Water, in which they were not seen long before. And therefore in an Ague, we may conjecture the Declination of it, when we see Bubbles to appear after that sort, except it be so that they appeared in the Urin at the beginning of the Sickness, and hath so continued still: For then they declare grievous pain to be in the Head, yea & that dangerous, if the Urin also be thin in substance. But if the substance of the Urine be thick, then the Bubbles are not so evil a sign, neither declare so grievous danger.

Fome. Sometimes instead of Bubbles which do not appear when they should, it sufficeth that there appears a gross Fome (as it is sometimes seen to rise upon Wine) & it doth betoken even the same thing that the Bubbles do, especially in the Declination of the Ague, of which I speak a little before.

These Bubbles do appear very thick about the Garland, in the Urin of him that hath the Issue of the seed, or wast of nature. Sometime also there are seen in the Bubbles certain small Scraps (as you would say) much like hairs

hairs in groſſeneſs, and of ſuch length ſometime that they reach from the one ſide of the Bubble unto the other; and ſometimes longer, and ſometimes ſhorter: which things may come either of the waſting of the Reins, or elſe of the ſhedding of Nature.

The cauſe of the generation of Bubbles, & alſo of the diſperſing and Elevation of the Contents, is an unnatural Windineſs. Of which, as there are divers kinds much differing aſunder, partly in Multitude, partly in Subſtance, and partly alſo in Quality, ſo doth the Bubbles engendred of them diverſly vary, according unto thoſe differences, whether they be Sole and Several, or Joyntly many knit together. But Windineſs if it be Groſs, then doth it puffe up ſuch Bubbles; and if it be Subtile, then doth it rather work a Diſperſion in the Contents, and is not able nor meet to cauſe Bubbles. And hereby may you know the Quality of the Windineſs, and likewiſe alſo the Quantity. For there appeareth leſs quantity of Windineſs to be where the Contents only are Diſperſed, then where ſuch Bubbles be engendred.

Now as touching the other Qualities of it, as Heat and Cold (which are the chief Qualities indeed, and moſt Active) you may judge

them by the Colour of the Bubbles. For a pale Colour, and other low Colours declare coldneſs of that windineſs, ſo high Colours enclining toward Yellow or higher, be certain tokens of Heat.

Bubbles that are ſmall, and thick knit together in the Garland of the Urine, doth betoken a groſſe Windineſs, whoſe cauſe cannot eaſily be vanquiſhed; for the groſsneſs and toughneſs that is in them, will not ſuffer them to ſwell great, & that cauſeth them to be ſmall. And contrariwiſe, the greater that the Bubbles be, and the more bouled, the more they declare that Windineſs that cauſeth them to be ſevered from tough Matter. Moreover, the colder that ſuch Windineſs is, the leſſer grief is felt of them.

Bubbles in the Urine of old Men, namely being great and large, do betoken cold Windineſs, but ſometime ſuch Bubbles are a ſign of Rheum diſtilling from the Head into the Lights, eſpecially if the Patient at the entring of Summer were very hot, and ſo did drink much, which Matter, the Head being dryed, did draw unto him, and did diſtill again part of it down into the Lights, whereof cometh a Cough, and part of it into the Womb, which thereby is moved to Lax.

CHAP.

CHAP. IX.

Of the Garland and other like things.

AS I have compendiously, and yet not very slightly spoken of those former parts to be considered in Urine, so will I briefly speak of a few more, which may not well be omitted, and so make an end of the Judicial.

The Garland.

First, therefore in the over-part of the Urine, round about the edge of the Urine there appeareth a Garland, Circle, or Ring, which doth there appear, by reason that the higher part of the Urine being thinner than the rest, and more subtiller, and therefore doth not only more sooner alter, but doth more readier declare the alteration. Howbeit sometime there doth appear no Ring at all; and that is when the Colour of the Urine, and of it is all one, by reason of the great force of the cause which altereth the Urine, but yet so that nature doth match that Humour, and is neither over come by it, neither yet hath overcome it. For if Nature have plainly either got the Victory, or lost it, then is there another Colour in the Garland, then is in the rest of the Urine.

Now if the Colour of the Urine be evil, and the Colour of the Garland better, it is a token of health. As if the Colour of the Urine be Yellow, Red, or Crimson, or any such like, and the Colour of the Garland be White, or Whitely, it is a token full of good hope; but when the Colour of the whole Urine is Evil, and the Colour of the Garland worser yet, then is it an evil Sign. As when the Colour of the Urine is Green or Purple, and the Garland worse Coloured, then is it a plain token that Nature is overcome, & that the evil Humours have gotten the upper-hand.

Of these more particularly doth *Egidius* Treat, but yet not more truly nor more sufficiently, his words are these: *If the Circle of the Urine be thick and watery, it is a token that the hinder part of the Head is oppressed with Phlegmatick-water; but if it be Purple Coloured and thick, then is the forepart of the head overcharged with Blood.*

A Pale and a thin Circle declareth the left side of the Head to be troubled with Melancholy Matter; but if it be Red and Thin, it betokeneth Choler to abound in the right part of the Head.

Leady or Ash colour.

A Leady or Ash coloured Circle, doth signifie the falling Evil, through the great grief of the Brain.

And

And further declareth that such Grief shall proceed by the Sinews into the other parts of the Body. But if after such a Leady Colour there follow a reddish Colour, that is a good token; for then doth Nature gather strength again, and the powers of the Brain reviveth.

If the Colour of the Garland be Green, & the Patient have a burning Ague, it is to be feared, lest that the abundance of Choler shall cause a Phrenzy. Green.

Black Colour in the Circle doth sometime betoken Mortification, and sometime only extream Heat. But these shall you distinct (as I said before of the Urine it self) by the order of the Colours. For if green Colour went before, then doth the black betoken Adustion through Heat; but if his Colour last before was Ash-colour, then is it a token of Death, coming through the Dominion of Cold. And thus much as touching the Colours may suffice for this time. Black.

Sometimes also you shall perceive a Quivering and Trembling in the Garland, and that declareth Grief in the Back-bone. And thus many tokens be taken of the Circle or Garland. Quivering In the Garland.

Sometimes there will appear fleeting on the Urine, certaine Scum or Fatness, sometimes like drops of Oyl, and sometimes Fattiness.

like a thin Spiders web, and these both do betoken the melting of the Fat within the Body, as *Hippocrates* witnesseth in his *Prognosticks*, howbit in his *Aphorisms* he doth assign it as a token of the Grief of the Reins peculiarly, Saying; *In whole Urine there fleeteth Fattiness, and that much at once, they have Pain in the Reins, but shall not long endure.*

7 Aph. 30.

This *Aphorism* doth *Galen* understand so to be true, if that Fattiness appear quickly & much at once; else if it come by little and little with longer continuance, so doth it not betoken waste only of the Fat about the Reins, but rather throughout the whole Body, wch sign yet is not alway evil, except it continue long; for if it continue but a little while, it declareth no great evil.

Stinking Savour in Urine.

Now to go forth with other signs; If the Urine have a stinking Savour, it is ever an evil sign, for it doth betoken some putrefaction more or less; as of the Bladder onely, by some Blister or Sore in it: and that most certainly, when the Stinch is very great, and there appeareth also Scales in the Urine, and Matter. But if there be Matter in the Urine, and the stinking Savour but mean, then doth it declare the Sore to be in some other part of the Body. But this ever is true,

true; that Matter in Urine is a token of a Sore. And if in continuance of time the Matter and Stinch do abate, it is a good token, but if the other continue or increase, it is an evil sign. If the Urine do stink, and there appear no Matter in it, then is it a token of some mortifying. For if there be in the Urine mean tokens of Concoction, then is the mortification in some one part of the Body; but if the other Signs in the Urine be evil, then is that mortification rather of the whole Body, then of any one part of it.

And thus have I over-run briefly the chief things to be considered in Urine, which (I say) are appertaining or annexed to the Urine it self. Howbeit Two other things there are, which though they be more plainer then these other, yet may they be overpassed no more then the other: that is to say, Blood coming forth with the Urine, and Gravel expelled therewith also.

Blood coming forth with Urine, doth declare some Sore to be in the Reins or Bladder (as *Hippocrates* writeth in his *Aphorisms*) or else some Vein to be broken about the Reins, namely if it come suddenly, & without manifest cause. Howbeit, as *Galen*, *Oribasius*, and divers others do declare, & reason also with experience doth consent, there Blood.

there may appear Blood in the Urine alſo, if that there be ſuch a Sore in the Liver, or in the Shaft. But in any of theſe caſes, the pain felt in the Place and Part, will utter from whence the Blood cometh.

Gravel. Now to ſpeak of Gravel: *Hippocrates* ſaith, *In whoſe Urine there appeareth Gravel in the bottom, they have the Stone in the Bladder, or elſe in the Reins*, as *Galen* addeth; but commonly if the Stone be in the Reins, the Gravel will be Red, as *Hippocrates* declareth in his ſixt Book of his *Epidemiet*, And thus now will I make an end of the Judicial of Urine.

CHAP. XI.

Of the Commodities and Medicines of Urine.

THe greateſt Commodity of Urine is already declared: that is, That it doth declare unto Man, the manifold Diſeaſes which happen unto him; and thereby doth not only give him knowledge of the Cauſe, and ſo conſequently of the Cure of the ſame, but alſo warneth him before of the grief to come, whereby he may take an occaſion to eſchew it, if he will be diligent.

Now

Now as this is the grateſt commodity of Urine, ſo it hath many other as well in uſe of Medicine as other wayes, of which I will write ſome, though not all. And firſt out of *Pliny*, which reciteth ſtrange Operations of the Urine of a Hedge-hog, and of a Beaſt that the *Greeks* call *Leontophon*, and moreover of the Beaſt *Lynx*, which I omit now with many other: but this will I not omit, that *Hoſthanes* ſaith: *That if a man let his own Urine drop upon his Feet in the morning, it is good againſt all Evil.* And that it is good for the Gout, we may perceive by Fullers, which never have the Gout, by reaſon that their Feet are ſo often waſhed with it. *Pliny.* Urine of Man.

The ſame *Pliny* writeth, *That the Urine of an Oſtrich, will do away Blots and Moles of Inke.* Oſtrich Urine.

Alſo that if Urine be tempered with water of like quantity, and ſo powred at the roots of the Trees, it will both nouriſh them (as many men ſay) and alſo drive all noyance from them.

The Urine alſo of Men, or Oxen, tempered with Hony, and given to Bees, will cure them that are Poyſoned with the flower of the Cormier or Cornoiller Tree. Bees.

And likewiſe if Beans be ſteeped in Urine Beans.

Urine and water three dayes before they be Sowed, ſome judge that they will increaſe exceedingly. *Dioſcorides* ſaith, *That a Mans own Urine is good to be drunk for ſtinging of Adders, and againſt Poiſon, and alſo againſt the Dropſie when it doth begin: And for the ſtinging of the Sea-Adders, of Scorpions, and Dragons*; it is good to ſoke the ſtinged part withal.

Dioſcorides Stinging of Adders, &c

The Urine of Dogs is good to ſoke the place that is bitten, with a Dog, and to cleanſe Mangineſs, and Itchineſs, if Salt-peter be added thereto. And that that is old wil more ſtrongly cleanſe Scales, Scurfs, Scabs & hot Puſhes. Alſo it ſtayeth fretting Sores, namely, on the privy Members. Furthermore it ſtincheth mattering Eares, if it be dropped thereinto, and if it be ſod in the Rind of a Pomegranate, it expelleth worms out of the Eares.

Dogs Urine.

The Urine of a Child under 14. yeers of age, doth cure the toughneſs of Breath, if it be drunken. If it be ſod in a Brazen Veſſel with Honey, it healeth Creythes, and alſo the Web and the Tey in the Eye. There is made of it and Copper, good Soulder for Gold.

Childes Urine.

The Dregs of Urine is good for Saint *Anthonies* Evil, if it be nointed thereon, ſo that (as *Galen* doth wiſely add) the Sore be cooled

Dregs of Urine.

sed first with some other thing, and be not Burning. If it be heated with oyl of Privet, and laid to the [Womb of a Woman, it will asswage the Grief of the Mother, and cureth also the Rising of the same. It cleanseth the Eye-lids, and the Creythes in the Eyes.

Oxe stale being tempered with myrrh, and dropped into sore Ears, healeth the pain of them. The Urine of a wild Bore, is of the same Vertue if it be kept (as *Sextus Platonious* writeth) in a Glass, and dropped warm into them; but it hath a more peculiar Property in breaking of the Stone, and to expel the same, if it be drunk. Oxe stale. Wild Bore.

Goats Urine drunk every day, with Spikenard, and three ounces of water, is good for the Dropsie, for it expelleth Urine by the Sege, and it cureth pain of the Ears, if it be dropped into them. Goats Urine.

Asse pisse (as it is written) is good for the Grief of the Reins, if it be drunk. Asse pisse.

Mules stale (as *Palus Ægineta* saith) is good to heal pain in the Joynts. Mules stale

The stale of Camels and Goats also doth provoke Sege, and therefore is good for them that have the Dropsie. Camels and Goats stale.

Sextus Platonicus saith, That Goats Urine (if it be drunk) doth provoke Womans Terms, and cureth pain in the Ears being dropped *Sextus Platonicus.*

Paulus Ægineta. droped into them, and being mixed with Mulset Wine, and so dropped into the eares, it draweth out Matter, if there be any.

Wild Bore. The Urine of the wild Bore with Mulse Vinegar, is good for the falling Evil, if it be drunk.

Dogs pisse. A Dogs pis tempered with dust, and laid in wool, will heal Corns marvellously, and destroy Warts.

Childs Urine: A Childs Urine will heal the stinging of a Bee, Waspe and Hornet, if the place be washed therewith.

Mans Urine A Mans Urine will cleanse the Freckles and Spots in the face. And if a woman cannot be delivered of the after Burden, let her drink Mans Urine, and she shall be delivered straight.

Collumella. *Collumella* saith, that the best dunging for yong shots of Trees, is Mans Urine, namely, which hath stood half a year. For if you water Vines or Apple-Trees with it, there is no dung that will cause so much Fruit as it will do: and not only that, but it causeth also the savour and the taste both of the Apples, and of the Wine, to be much the better.

Sheeps Urine *Constantinus Affricanus.* *Constantinus Affricanus* saith, *That the Urine of a Sheep, or an Oxe, with some hot Oil, is good for the grief in the Ears that cometh*

of

of cold. Urine (as *Vitalis de Furno* saith) fretteth, dryeth, and burneth, and is good for the grief of the Spleen, if it be drunk, as *Gentilis* writeth. *Vitalis.*

The Urine of a Male Asse, as the same *Vitalis* saith) *tempered with* Nardus *doth increase and preserve hair.* Asse stale.

And as some say (by the writing of *Marcellus Virgilius*, *Urine is of no small nourishment, for divers folk in the time Dearth, have been preserved by the only use, and drinking of it.* *M. Virgilius*

Also *Marcellus* the Practitioner, in the 27. Chapter doth witness; *That the Urine of a man is good for divers diseases of the Wombe and Bowels, and namely for the Collick, because that partly with provoking of Vomit, and partly by occasion of Seges, it expelleth strongly all noysome Humours, and for the same cause doth common Practitioners keep it still in daily use.* *Marcellus.*

Ulderick Hutten also witnesseth, *That he did drive away the Ague above 8. times with the only drinking of his own Urine, at the beginning of his sickness.* And many still do use the same practise, and it proveth well. *Uldericus Huttenus.*

Likewise *Marsilius Ficinus* writeth that *Many men do use to drink Urine for the Pestilence,* *Marsilius Ficinus.*

ſtilence; which thing did *Galen* write long before him, and alſo *Palus Ægineta*; and do teſtifie alſo, that it preſerved them that drank it: at the leaſt way as they thought.

Galen. All Urine (as *Galen* writeth) is hot in Vertue, and ſharp (as ſaith *Ægineta*) howbeit, it differeth according to them that make it. For the hotter they are that make it, the hotter is it alſo, and likewiſe the colder Urine cometh of a colder Body.

Mens Urine is the weakeſt of all other, except tame Barrow-hoggs; for they in very many points agree with Man; but the Urine of wild Bores is ſtronger.

Mans Urine. Mens Urine is of as ſtrong cleanſing Vertue as any thing elſe, and therefore do Fullers uſe it to ſcoure and cleanſe their Cloth. And in cure of Griefs alſo for the ſame reaſon, it is uſed to ſoke, and waſh Mangineſs, and Scabbedneſs, and running Sores that are full of Corruption and filth, & ſpecially if they have in them putrified Matter, and for ſuch Sores on the privy Members it is good, and for mattering Ears, and for Scales and Scurff, if the Head be waſhed in it.

I have healed with it many times Sores on the Toes, namely, which came of Bruiſes, and were without Inflammation, and that in Servants and Husbandmen, which had a jonrney

journey to go, and no Phyſitian with them, bidding them to wet a ſmall clout with it, and to put into the Sores, and then to bind a cloth about it, and as often as they liſted to make water, to let it fall on their Sore Toes, and not to take the cloth away till it were quite whole.

That Medicine which is made of Childes Urine, called of ſome men in Greek, *Chryſocola* (that is to ſay, Gold ſoulder) becauſe Men uſe to ſoulder gold. This (I ſay) is exceeding good for Sores that are hard to heal. For this Medicine do I uſe for the chiefeſt, mixing it with ſuch other things, as are good for ſuch like Sores. Chriſocolla

In the time of Peſtilence in *Syria*, many did drink Childrens Urine and Mans alſo, and thought that they were preſerved by it.

Of Urine alſo, do Alchumyſts make divers things, as Salt, and other things moe.

As many other commodities there be of Urine, as for Waſhing and Scouring, and other like, which for briefneſs I over-paſſe, and the rather, becauſe they are commonly known of all folk.

Of the Diseases touching Urines, and the Remedies for the same.

NOw to come to that I promised, as touching the Griefs which hinder Urine, or expel it disorderly, either in time oftner then is meet, or in Quality, with other fashions then is agreeable to it, or like other sorts, I will briefly write, not intending to teach the Art of Curing them, (which would require a longer Treatise, and a meeter place) but only to name certain of the most common Diseases, and to set after them such simple and uncompound Medicines only which cure those Griefs.

Stopping of Urine. The stone.

First therefore, touching the hinderance or stopping of Urine, it is not unknown, that one common cause is the Stone, which sometimes is in the Reins, and sometimes in the Bladder. I shewed you before, that commonly you may discern those two asunder, by the Colour of the gravel, but the more sure token is the Grief in the sick part.

Now for the Cure of the same, doth these Medicines serve, which follow. But as I have alwayes said, you shall use them with the counsel of some learned Physitian; for there is great difference both of the Grief, and of the Medicines.

Medi-

Medicines for the Stone, both in the Reins and Bladder.

Astra Bacca.
Ameos.
Angle toches sod.
Betony.
Bryony root.
Bylgrum.
Chamamel.
Capers Bark, namely of the root.
Claret seed.
Clot seed.
Dock root.
Fennel seed, and root.
Goats blood.
Gladian.
Gromel.
Gum of Plumtree, and Cherry tree.
A hedge Sparrow.
Harebel.
Kneholm root and Berries.
Madder root.
High Mallows seed and root.
Mogwort.
Parsley.
Pelliter of Spain.
Pyony Berries which are black.
Radish.
Sampere.
S. Johns Wort.
Sperage.
Seholm.
Swines Fennel.
Southren Wood-seed.
Sour Almonds.
Tent-wort.
Tutsan Berries.
Water Plantine.
Winter Gilli-flower.

And beside these there are divers others.

Also the Stone it self that came from a

man, being braid and drunken, will break and expel that other within him.

Beſides the Stone, alſo it cauſeth the Urine to be clean ſtopped, by reaſon of weakneſs of the expulſive Vertue, & ſometimes through clodds of Blood, which reſt in the Shaft. Sometimes alſo through tough and clammy Humours, and ſometime through ſome ſwelling within the Yard, and divers other wayes alſo, of which the Declaration is too long for this place and time: but another time I entend to Write of them at large, and of all other Griefs of mans Body.

But to return to this Matter that is in hand. One other ſtop of Urine there is, which doth not clean let it, but cauſeth it to avoid leſſer then it ſhould; and this cometh of like cauſes as that other laſt did, ſave that the cauſe is leſs, according as the ſtay of Urine is, and therefore the Cure in both is much like. For if it come of Weakneſs of the expulſive Vertue, then with the uſe of other hot Meats and Drinks, thoſe Medicines are good which do provoke Urine, as theſe be that follow.

Medicines which do provoke Urine.

Anniſe-ſeed.	Baſyle.
Ally-ſaunders.	Bylgrum.
Alkakengi.	Cammock.

Char-

Charlock.
Charvel.
Carawayes.
Calamus Aromaticus.
Cubebes.
Dictany of Candy.
Dragance.
Fumitory.
Fatchys.
Flower delyce.
Garlike.
Ground pine.
Ginger.
Helecompace,
Honey.
Juniper and the Berries.
Lase savery.
Leeks. Mints.
Margerom.
Maiden hair.
Mavew. Nepte.
Negella Romana.
Nettle. Pepper,
Pye Ryal.
Quinces.
Rue. Rosemary.
Rocquet.
Savine.
Sage, Savery.
Time.
Valerion.
Wild Marjoram.
Wild Parsley.
Wild Time.
Water Cresses.
Woodbinde.

with many other, and namely those for the most part, which I named before to be good for the Stone. But there must be discretion in the use of them.

Besides those, is there a Disease named the Strangury (which some corruptly call the Strangurion) in which Disease the Urine doth continually drop forth, as fast as it cometh into the Bladder. And therefore may it well be noted the first kind of such

Excess of Urine.

Griefs as provoke forth, & further Urine exceſſively. For that Strangury theſe Medicines following are noted good.

Medicines for the Strangury.

Aliſander.	Knot graſs.
Aſtra Bacca.	Kneholm.
Brokelime.	Sperage.
Ceder berries.	Seholm.
Ceterake.	Spatula Fetida.
Calamus Aromaticus.	Turpentine waſhed.
Gladian.	Wilde Fennel.
	Water Mints,

But you may conſider (as I have often ſaid) that as the Diſeaſe may come of ſundry Cauſes, ſo it muſt have ſundry Cures. For moſt commonly theſe are good that I have written, yet ſuch may be the cauſe of the Sickneſs, that they may do harm, therefore take alwayes counſel of ſome learned Phyſitian.

Another kind of exceſſive making of Urine cometh of the Weakneſs of the retentive Vertue in the Reins, whereby the Patient Piſſeth as faſt as he Drinketh, and that in like Quantity. This I may call the Flux of Urine, or piſſing Evil: or after the Imitation of the Greeks, the piſs Gout. For which Diſeaſe it is not greatly commendable

Flux of Urine.
Piſſing Evil.
The piſs Gout.

to

to ſet forth Medicines with the only bare Names. Howbeit, if I do it, I truſt no man will the rather miſ-uſe them, namely being warned ſo often to take no Medicines without counſel, and eſpecially in this thing, For ſome of the Medicines muſt be received inwardly, and ſome of them emplaiſtred outwardly.

Medicines for the piſſing Evil.

Apples.	Cycory.	Comfery.
Dates.	Endive.	Paritary.
Elecompane.	Penny wort.	Lettis.
Perys.	Lintels.	Pomegranat.
Myrtle Berries.	Purſlane.	
Night ſhade.	Vine leaves.	

Other defaults there be of exceſs of Urine, as of them which cannot keep their Urine, and namely of Children, which piſs their Beds. This Diſeaſe cometh oftentimes of the diſſolution of the Muſcle which ſhould keep their Urine, & therefore requireth cure meet for it, and unmeet for this place, and ſuch ſhortneſs. Wherefore for this time here I will make an end, truſting that all men will with as gentle heart receive this my Writing, as I of Gentleneſs have taken the pains to ſet it forth.

Additions.

Of the Diversities of Colours, and of the making of them.

BEcause that it is not very easie for every man to distinguish Colours duly asunder, I thought it good at the end of this Book, a little to touch the Distinction and making of them, namely of such as are mentioned before in this Book.

Milk white. Milk white, by the name of it self doth sufficiently declare what it is; for it is the very Colour of Milk, though the substance need not to be so thick in the Urine, as in the Milk, for the Colour must be understood several from the Substance, both in this and all other Colours, which thing would be remembred, for it might else (as it hath often done) deceive the simple folk.

Horn white Horn white in like manner hath his Name of the thing that it assimuleth most; for it is like the White and clear part of a Horn of a Lanthorn, or such like.

Grey. Grey is like the White part of a mans Nail next unto the Joynt, or like Hoar hair that is not very White; for Gray is so much darker then Horn White, as Horn White is darker then Milk White.

Pale

Pale Colour hath a certain appearance of Yellow in it, but is exceeding little. If you seeth a piece of the Rind of Pomegranate, and then put to it thrice as much clean Water, it will be a pale Colour. Pale

But if you put thereto little or no clean water, it will be flaxen Coloured, that is somewhat more Yellower then Pale. Flaxen.

After it followeth Pale, which is a kind of light Yellow, something lighter in Colour then Crown Gold. Pale.

For the Colour of pure Gold (as an Angel or Royal) is a right Yellow Colour. Yellow.

A light Saffron Colour is, that Colour that Saffron doth make when it is steeped in water, and laid light on any white. For if it be laid on deep, then doth it make a full Saffron Colour. For that is called a Saffron Colour, which Saffron doth die, and not that that is in the Saffron it self. For that is very Red, & is higher then Claret, which is a mean Colour between Saffron and Red, as if it were made of them both mixed together. Light Safiron. Saffron. Red. Claret.

Crimson is a dark Bloody Colour, well known by his own name, but is not in Urine so light as it showeth in cloth. Purple, needeth not to be much described, being so commonly known, howbeit if you will see the making of it, mix a dark Crimson, with Crimson. Purple.

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an orient Blew, and it will be Purple. And becauſe that many men be deceived in the Latin name of this Colour, you ſhall obſerve that it is not that which in Latin is called *Purpureus Colour*, (as moſt Men think) for that is rather a Crimſon, but it is called more peculiarly *Purpura violacea*, or *Paſſeus Colour*.

Blew. Blew Colour is the Colour of the cleer Skie, or of Azure. Howbeit, in Urine it is not ſo orient, but if you will mix pure white (as white Lead, or pure Lime) with due portion of right Black (as Cole duſt, or other like) then there will of theſe amount that Blew, which is aſcribed to Urine.

Green. Green is a compound Colour of Blew and Yellow duly tempred together. And the right Green have I in this Book called a ſtark Green. But if the Yellow do exceed in it, then is it a light Green; and contrariwiſe, if the Blue do exceed, then it is a dark Green: Of this Green doth *Dioſcorides* mean, when he doth ſay of divers Herbs, that their leaves be Black; and ſometime when he noteth white-lines to be in Herbs, he meaneth a light Green, though he other times underſtandeth thereby a certain Hoarineſs; of which thing in my Herbal you ſhall read more exactly.

Starkgreen.

Lightgreen

Oyly. Oyly Colours differ from Green oyly in their

their lightneſs of Hue, and thinneſs of Subſtance in the Urine where they appear. The light Oyly is ſomewhat lighter, (or rather) brighter and more glittering then light Green, So is the ſtark Oily brighter then the ſtark Green, and the dark Oyly then the dark Green, which all cometh through the thinneſs of Subſtance in the Urine. Light. Stark. Dark.

Aſh-colour is darker then Blew, and is made of the ſame ſort that Blew is, ſave that it requireth more of the Black by twofold. This is the Colour of Lead, which is much darker then the inner part, though indeed both are one Colour, and differ only in brightneſs and darkneſs, which ought rather to be called the Hue of Colours, then Colour. Aſh-colour

Now as for Black, I need not to ſpeak any whit, for as all men do know it, ſo theſe very Letters do ſhew it, which though of all other it be moſt Deadly, yet is it ſurely of all the moſt Mighty, for it overcometh all Colours, and none can change it, ſo that well it may be called the Colour of Death. For as Death overcometh all Bodies, ſo Black doth damp all Colours; beſide, that it is the Meſſenger and Token of Death, which is the end of all things, and Black the end of Colours. Black.

The Expoſition of certain Words.

NOw for becauſe I was inforced to uſe ſome (though but few) terms in this Book, which be not well known of the moſt ſort of Men, thought a great number know them well enough, by often talking with Phyſitians, I thought it good here to declare ſome certain of them, for the aid of the moſt ſimple Sort.

Ages.

Becauſe that in the judgment of Urines, the differences of Ages ought to be conſidered, you ſhall underſtand that the chief differences of them are Four, that is to ſay, *Child-hood*, *Youth*, *Man-hood*, and *Old-age*, for though there be commonly 7. Ages reckoned, yet theſe be Four principal, and the other Three be comprehended under theſe Four; Childhood endureth from the hour of Birth till the end of 14. yeers of Age, and is of Complexion Hot & Moiſt. At the end of 14. yeers beginneth Youth, and laſteth til the 25. yeer, and this Age of all other is in Complexion the moſt temperate. From 25. until 35. yeers, is the flouriſhing of Manhood, but yet that Manhood laſteth (though not in full freſhneſs) untill 50. yeers of Age, & this Age is of Complexion Hot & Dry. From 50. yeers forward,

Childhood

Youth.

Manhood.

forward, is the time of Age peculiarly called, in which time mans Nature is cold and dry, and not moist, as many do falsely think. Age.

Active Qualities, see the title of Qualities. Active q.
Alterative Vertue, see in the title of Vertues. Alterative.

Brightness in Urine must be marked for a several thing from cleerness. For the brightness betokeneth the orientness and the beauty of the Colour, with a certain glistring. Brightness.
And Cleerness is referred to the substance of Urine, and is ever annexed with thinness of it. Yet is it a divers Quality from thinness. So may an Urine be cleer in substance, by the reason of his thinness, and yet not bright in Colour, and not cleer in substance, but this would be well pondered, lest this necessary distinction, cause a negligent confusion. Clearness.

Critical dayes be such dayes, on which there is (or may be) perceived some certain token and great alteration in the sick Body, either to health or death, or continuance of sickness. What these be, more at large I will hereafter (God willing) declare it in a Book peculiarly, because it requireth more largeness of words, then is meet for this place. But one thing I must tell you, that the same dayes also be called Judicial, but not Indicial, for the Indicial dayes are of another kind: but yet associate to these other. Critical dayes. Judicial dayes.

Crudity

Crudity. Crudity is the rawneſs of the Meat in the ſtomack, when the natural operation of it cannot duly digeſt the meat which it hath received; and therefore the Urine which declareth defaults of ſuch digeſtion, is called a Crude, Raw, and unconcoct Urine.

Cupping. Cupping is commonly known, that it needeth no Declaration.

Cloddy Urine. A Cloddy Urine is that which hath in it clods of Bloud, or other crude Matter, or any clufterings of difform Contents.

Dulneſs. Dark ground is not meant of the darkneſs of Colour, but rather of the ſlenderneſs of ſubſtance, ſo that it can ſcarcely be diſcerned to be any ground, by reaſon that it is ſo neer in ſhape and ſubſtance to the reſt of the Urine. Dulneſs of Colour is contrary to brightneſs, ſo that when the Colour lacketh all brightneſs, then is it clean dulled, and whatſoever thing cauſeth decay of ſuch brightneſs, that thing dulleth Urine.

Divers. Thoſe Contents be called Divers, which have neither their own right form, nor any other certain, but are altogether diſordered and out of Form, rather ſeeming to be many then to be one.

Duly knit. Duly knit, is a property of due Contents, when they are not tattered, ragged, nor jagged, nor flittering aſunder, nor yet are not

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ſo clammed together, as tough fleam, or any ſuch thing, but are in a moderate moan between both theſe.

A gathering Sore, is that Sore that is cauſed of the exceſſive recourſe of Humours into any part of the Body, as a Bile, or any other like. A gathering.

Harveſt, ſeek times of the yeer. Harveſt.

Judicial dayes, ſeek Critical dayes. Judicial dayes.

Inequality of ſubſtance in Urine doth appear to be the difforments and diſagreeing of the parts of it together; as when it is thin in one part, and thick in another. Howbeit, it is as well uſed for the alteration from a mean ſubſtance to thickneſs or thinneſs, or other wayes unnatural. Inequality.

Obſtruction, is a ſtopping commonly of the Veins, and ſuch great Conduits (which convey Blood or any other Humour) ſo that the thing which they ſhould convey cannot freely paſs as it ought. But if the like ſtopping happen in the pores of the Skin, (I mean thoſe unſenſible holes, by which ſweat paſſeth out) ſo that neither ſweat, nor any like excrement may paſs that wayes, then is it moſt named Oppilation. Howbeit, as theſe words be ſometimes uſed the one for the other, ſo they be applied alſo to other ſundry parts of the Body; but evermore they betoken Obſtruction. Oppilation.

ken such stopping in that part, that Natures work is hindered thereby.

Principal members. Principal Members (as to our purpose now) are these 3. the Brain, the Heart, and the Liver.

Passive. Passive: seek Qualities.

Putrefaction. Putrefaction is commonly known to signifie, rotting.

Qualities. Qualities active, are named Heat and Cold, because they are made apt and able to work, then to be wrought. And contrary wayes, drineſs and moſture are named Paſſive, or ſuffering Qualities, becauſe they are more ready to be altered by the working of Heat and Cold, then to work themſelves; howbeit yet they do work alſo.

The four times of ſickneſs. There be in Sickneſs Four principal parts of Time, to be obſerved of Phyſitians: The beginning of Sickneſs, the Increaſe or Augmenting, the Standing or chief force of it, and the Declination or Aſſwaging of it.

The beginning. The Beginning is, from the time that ſickneſs hath overcome Mans ſtrength, and brought him to lie Down, till there do

The Increaſe. appear manifeſt Signs of Concoction of the Matter, whereof the Diſeaſe cometh; at which time, the ſickneſs waxeth fiercer and fiercer: and while it ſo continueth, that time is called the Increaſe and Augmenting of

of ſickneſs, but when the violence of the ſickneſs is at the moſt, ſo that the rage of it is at one ſtay, and neither increaſes nor decreaſes, that time is called the ſtanding, ſtay, ſtate, or chief ſtrength of the Sickneſs. And after that the Furious rage of Sickneſs doth abate and calm his cruel Storms, then is the Declination of the Sickneſs: after which (if the Patient eſcape as very few die in the Declination) then followeth recovery to health again. And theſe be the four general or univerſal times of Sickneſs. Beſide theſe there be other times more particular, whereof now to ſpeak I need not. The diverſity of times in the Year are duly to be obſerved, for they do much alter Mans Body.

The ſtate. Declination. Times of the Year.

The Spring time increaſeth Blood and bringeth all the parts of the Body to a temperance, as nigh as it can. For it of all other times is the moſt temperate, neither exceſſively hot, nor cold; neither moiſt, nor dry; but of a juſt temperature, as *Galen* proveth abundantly in his Firſt Book of *Temperaments* where he doth much blame them that name it to be hot and moiſt, which he ſaith, is of all other the moſt peſtilent ſtate of Air. This Spring, after *Galens* mind, doth begin about the tenth day of *March*, and endeth about the 14. day of *April*, ſo

The ſpring

that it lasteth but 6 Weeks and 2 Dayes. For at the rising of the *Pleiades* (which is now in our time about the 24 day of *April*) he saith that Summer doth begin. Which Summer is in Complexion hot and dry, and therefore meet to increase Choler, which in that time doth abound. The Summer lasteth 21 Weeks. Harvest doth begin after *Galens* mind, about the 17. day of *September*, and lasteth 7. Weeks. The Harvest, is dry of Complexion, but neither only hot, nor only cold, but is distemperate in heat and cold. For in the Morning and Evening it is cold and at Noon it is hot. So may it not be called justly (as Men do name it) cold and dry. In this time doth Melancholy encrease. At the end of Harvest, about the seventh day of *November*, doth Winter begin, which time is cold and moist; and therefore encreaseth Flegm, which is like in complexion unto it. And the Winter lasteth till the 10. day of *March*, so, is it in length about 17. Weeks and a half, and then beginneth the Spring time again. And this is the course of the Year, after Physick. Other men which intreat of Husbandry, do part the Year into 4. equal parts, giving 3. Months to every time. Unto the Spring they give *February*, *March*, and *April*. To the Summer, *May*, *June*,

Summer.

Harvest.

Winter.

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June, and *July*. Unto Harveſt, *Auguſt*, *September*, *October*. And unto Winter they appoint *November*, *December*, and *January*. Why the Phyſitians part the Yeer one way, and Writers of Husbandry another way, at more convenient time I will declare.

Vertues natural are Four. The firſt is, that which draweth nouriſhment into due places, and that is called the Attractive Vertue. The ſecond, is it that altereth the nouriſhment into a due form to nouriſh the Body, & is called the Alterative Vertue. The third is that Vertue, which keepeth in the good nouriſhment, till the Alterative Vertue hath duly altered it, and therefore is called the Retentive Vertue. The fourth, is called the Vertue Expulſive, becauſe his office is to expel thoſe ſuperfluous Excrements which are left, when the other Vertues have done their office duly.

Vertues. Attractive. Alterative. Retentive. Expulſive.

FINIS.

The Safe, New Way of Examining Urines by Weight, first invented and found out by Joannes Baptista Van Helmont, *that Famous Philosopher, and Physitian.*

AN Ounce may weigh 600. Grains. I got a glass Vessel with a narrow neck weighing 1354 Grains, but filled with Rain Water, weighed over 4670 Grains. The Urine of an Old Man is found to weigh in the same Vessel 4720 Grains, or to overweigh the Rain-Water 50 Grains. But the Urine of a healthy Woman, of the age of 55 Yeers weighed 4745 Grains. The Urine of an healthy young Man of 19 Years of age weighed 4766 Grains. But the Urine of another young Man of equal Yeers, being abstinent from Drinking, weighed 4800 Grains: And a young Man of 36 Yeers of Age, having a Tertian with a Cough, weighed 4763 Grains. But the aforesaid young Man of 19 Years of Age, having a double Tertian, the night before drunk little; but his water weiged 4848 Grains, which was 82 Grains more than when he was in health,

health. A Virgin troubled with a Paſſion of the Heart, made water like Rain water, and which therefore equally weighed with the Rain water. The Urine being warm, is alwayes found to be a few Grains lighter, than when it is cold, as alſo more large.

Let therefore the Veſſel be of a ſhort neck and pointed ſo, that even in a point of time you may meaſure the Urine: To theſe other Obſervations may be added, by a curious Obſerver of theſe Directions ſpecified: And it is a far eaſier Method, than that which by another Author is reduced into *Aphoriſms*, by weighing out of the whole Man; and ſo judging of his particular eſtate.

Turnheiſerus alſo, hath invented a new way of judging of Urines, in framing a Stillatory Veſſel for Urine, and diſtinguiſhing it into 24 parts, and making it out on the out-ſide with his Lines, divideth the humane Body into ſo many Sections, and then judgeth of them.

Courteous Reader,

I *Have only inſerted theſe two paſſages, and late inventions, that thoſe who are curious Students in this way, may in proſecution of theſe new Diſcoveries, confer the*

Ancient

Ancient and Modern Practiſes together, being promiſed (if God pleaſe to afford my Friend Life and Health) in a very ſhort ſpace, to enlarge theſe Obſervations, and Novel Inventions, into a more full, and exact Method. In the mean while I ſhall deſire my gentle Reader to take theſe Offers, as they have been preſented unto me, in as good part, as I have freely publiſhed them.

Farewel.

A Detection

A DETECTION

Of some Faults in

Unskilful PHYSITIANS, Ignorant and Careless APOTHECARIES, and unknowing running CHIRURGIANS.

Written by a Doctor of Physick in Queen Elizabeths *Dayes.*

And also a Translation of *Papius*, concerning *Apothecaries.*

Useful for all sorts of People.

LONDON,
Printed by *G. Dawson*, Living in the *Bowling-Alley* in *White-Cross-Street*.
1662.

TO THE READER.

Courteous Reader.

AS the Books came to my hands, I have preſented them faithfully to you. If you accept of them, I ſhall account my labour well beſtowed, intending it for the Publick good; If otherwiſe you are offended at him that beſtowed them on me, he deſires you would be pleaſed to preſent ſomething of your own better; may oblige him and others to thank you for it; I thought fit laſtly, to acquaint you that, ſince my fitting of Record this ſecond time for the Preſs, lighting by the help of a Friend, upon theſe two other Pieces: The one, A Detection of ſome Faults of Unskilful Phyſicians; Ignorant, and Covetous Apothecaries, and Unknowing, Running Chirurgions; Written by a Doctor of Phyſick in Queen Elizabeths Dayes, a Book out of Print, and almoſt Knowledge: I thought fit to put again to the Preſs, as reproving the too frequent abuſes of theſe times:

times: And also a translation of Papius *concerning Apothecaries: Encouraged the rather, since the publishing of that translated, or rather transverted Dispensatory by that* Sapientum Octavus, Culpepper; *wherewith I have presented, as it came to my hands, a cursory passage (by some Well-wisher to that Honourable Society of Physicians,) prefixed before his translation; Intituled,* The Translator to the Reader.

Courteous Reader,

THere is a Book lately put forth against Anthroposophia. It is conceived the sum of the whole Book, collected from what is scurrilous, and unworthy of an Academian, may be comprised in little more than a sheet of Paper, whereby you may conceive how much the Author burtheneth the Readers Patience with Superfluous Trash; He is much troubled with Undivogius, and Anonymus; Books, I believe, his capacity never yet understood, and for his being gravel'd at what is wrote against Aristotle, he will find it a greater task to Answer Basson, Gassendus, or Van Helmont in what they have taxed him, then to write Invectives without discretion. Concerning Mr. Culpepper, he saith, He that looks on a Game, may see as much into it, as he that playes; 'Tis true, if he well knows the Game, but you have plaid your Game with the Physicians, and though your Gentility be not questioned, ingenious men will give you the Epithite of Eques male moratus, though not according to Riders

ders interpretation of Eques at Cards. You say the Liberty of our Common-wealth is most infringed by three sorts of Men, Priests, Physitians, Lawyers; the one deceiving Men in Matters belonging to their Souls, (if your Father were a Priest as is related, why might not he do so) the second in Matters belonging to their Bodies, (hardly not more than you by your Dispensatory) The third, in Matters belonging to their Estates (you are reported to have tryed some other Professions,) but only fasten on the Railer. Physitians you say walk in the Clouds, and that's the reason Men are led by the Noses: 'Tis strange Men in the Clouds, should lead Men below by the Noses; but you have as visible a piercing Eye to see that, as you have into Physick: But they are led by a company of Proud, Insulting, Domineering Doctors, whose Wits were born five hundred yeers before themselves; 'Tis a pretty Riddle, a Mans Wit should exceed him five hundred years: If your own went but half so long before you, I should believe they would hardly gallop up to one another, and you scarcely wiser, in five hundred yeers subsequent: But some have wasted whole Estates in Physick (it hath certainly been with such wise Æsculapians as your self,) though I scarce believe any wise Man would fool out a Groat on your judgment. It is unhansome, and unbeseeming, you say, to see a Doctor ride in state in Plush with a foot-cloth, (envy not their merits.) When a Translator may be trusted with his own Government, & writs any thing, Dignum

bono

bono viro, *he will be commended* servum Reipublicæ: *but they dare not visit a visited House, not for that they fear themselves, but because they would not fear others, whose lives may be in as great danger: But you think you have paid them with two Proverbial Verses, when the Patients ingratitude, when they are restored, may rather keep them away according to this Verse.*

1.	2.	3.
Angelus adventu.	*Cura Deus:*	*Exitu Abbaddon.*

Concerning Physicians in Italy *and* Holand, *they have State-allowances, but if our* Eques *can regulate no better, between allowances, and non-allowances, you will never be made a Justice for equal distribution. But in the Colledges Epistle, the not quoting of the vertues of the Receits is objected against them, but his wits had never quoted them, had not more ancient wits afforded him their light, though but a dark one to guide him. You say if* Apollo *had served the nine Muses, as they serve their Apothecaries, they would have had no more wit than nine Geese. I wonder whence the rare bird, or rather the feather of an Apothecary, (for he was not fledg'd when he deserted the Trade) aspired to this height to be able to teach the Physicians, whose Books he is not worthy to carry, unless as an Ass carrieth meat for his Master, and for himself: He had rather be Disciple to* Zoilus *than* Apollo, *He saith, The Nation are all already Physicians: If their own opinion have not made themselves so, your opinion la-*

bours

bours to do it, with a grain of your ſelf-conceited understanding; But all the Ancients wrote in their Mother Tongues, and native Languages, (but not all their works by his leave) yet all the People were not Phyſicians, neither in Arabia, Grecia, nor Germany; and both in Phyſick and Arts, they retain their Greek and Arabian Names to this day? And concerning their Doſes, how uncertainly they have delivered them, a ſearching man may eaſily diſcover, You had need collogue with the Term of worthy Country-men, when you tell, the Colledge doth in effect ſay, they are great Fools, but you would make them fit for the calling, if ſcurrility could faſten it on them.

The Apothecaries you ſay, would deſerve the name of a Company of Dunces, if they ſhould complain againſt the Phyſicians, and not connive for their Trade; but had my Gentleman gone out a Free-man in the Profeſſion, the Doctors would have been ſo bold with him as to have examined his ſufficiency, as they do others, before they paſs their Approbations for practiſe: You call Heaven to witneſs, none of the Colledge have provoked you; Whence comes this bitterneſs then undeſervedly, againſt them, but from (as you write) the Saturnine diſpoſition you were born under; you Aſtrologers, write, ſome Planets are evil in themſelves, yet joyned with ſome others, qualified with their conjunction are better affected, though Scripture teach you, when God had ſurveyed all his works, they were valde bona, and you can produce no place where ever

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the Heavens were curſed. But to conclude with the Gentle-womens favours who muſt not be forgotten: You preſent the beginnings of your labours at their feet, in your low humility, with an Herculean *undertaking to open unto them this famous, though too much abuſed Art of Phyſick, and ſo conclude with as much Arrogance, as you began with Folly;*

Your Friend,

Niſu bones.

A DETECTION OF UNSKILFULL PHYSICIANS.

The First Part treateth of divers and sundry Errors, and Abuses, of the unlearned and Wicked sort of Physicians.

THat Excellent Man and Great Clerk *Aristotle*, who for his incomparable Doctrine is of all Learned Men named the Prince of Philosophers, hath this saying in the Seventh Book of his *Ethicks*: *Non oportet tantum verum dicere, sed etiam causam falsi assignare*, that is, A man may not only tell the truth, but he must also shew and declare the cause of falshood and error. As who should say, The Truth

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can never ſo well appear, as when it is compared to his contrary, which is error, lye, and falſhood. *Quia oppoſita ſemper juxta ſe poſita, magis eluceſcunt:* Contrary things ſet one againſt another, are alwaies a great deal better known.

The Philoſophers of ancient time as it appeareth plainly in *Ariſtotle* and *Galen*, yea, and in the holy Doctors of the Church, in many of their words had in a manner more ado to confute the falſe Errors, Sophiſtry and Cavillations that were then uſed, and imagined as true Doctrine, then they had to write the very truth it ſelf. The great mercy of God had never been ſo well known, if the fall and tranſgreſſion of man had not been. And as St. *Paul* ſaith in the 5 Chapter to the *Romans*, *Where ſin hath exceeded, there grace hath the more exceeded.* And Chriſt in *Luke* 7. ſaid of *Mary Magdalen*, *Many ſins are forgiven her, becauſe ſhe loved much.* Now therefore before I ſpeak of the abuſes and enormities of Phyſick, Firſt, I will ſhew and declare, What is the part, office, and condition of a good Phyſician. Thus doing, I will firſt alledge *Hippocrates Jusjurandum*, that is, the Oath that *Hippocrates* would that every Phyſician ſhould take before he practiſe any

Phyſick

Physick. I will not Recite the whole Chapter, but the chiefest Part. *Cæterum quod ad ægros attinet sanandos, &c.* The English is this: And as concerning the Curing of the Sick, I will Ordain and Devise for them as good a Diet as shall lie in my Power and Judgment. And I will take heed that they fall in no Damage nor Hurt. Nor yet any mans Prayers shall so much Prevail with me, that I give Poison to any man, neither will I Counsel any man to to do. Likewise I will give no manner of Medicine to any Women with Child, to destroy her Child. Moreover I will use my Life and Science godly; I will not cut those that have the Stone, but I will commit that thing only to the Chirurgions. In what House soever I shall come in, my coming shall be for the Patients Commodity and Profit. And I will refrain willingly from doing any Hurt or Wrong, and from falshood, and chiefly from Venereous acts, what kind of Bodies soever I shall chance to have in Cure, whether it be of men or women, of free or bond-servants. And whatsoever I shall see or hear among my Cures (yea although I be not sought, nor called to any) whatsoever I shall know among the People (if it be not lawful to be uttered, I shall keep close, and keep it as

a Secret unto my ſelf. Again the ſame *Hippocrates* ſaith in the Book or Chapter called *Lex*. (to eſchew tedioufneſs, I will leave the Latine) Whoſoever, *ſaith he*, will truly get him the knowledge of Phyſick, he muſt ſatisfie his mind, and as it were be accompanied with theſe guides, with Nature, Science, a place meet and convenient for Study and Learning, an inſtitution from Childhood, a labour and painful Diligence with a long time.

Item, In his Book *De Medico*, he ſaith, The Phyſitian muſt be of a good Colour, and comely Countenance, and of a good Diſpoſition of the Body, he muſt alſo be had in eſtimation among the common people, by comly Apparrel, and by ſweet Savours (ſo that he be not ſuſpected of too much exceſs) for by ſuch means the Patients are wont to be delighted.

In like manner, the Phyſitian muſt ſee and Study, that he be of a modeſt and ſober mind, and not only concerning modeſt talk, but alſo in other things concerning his behaviour, he muſt be well diſpoſed; for there is nothing that getteth a man better eſtimation and authority, then to be endued with an honeſt life and good manners. His Countenance muſt be like one that is given to

ſtudy

ſtudy, and ſad, and yet not overmuch, for ſo he ſhould be taken to be ſtubborn and ſcornful, and like one that diſdaineth other mens company: But on the contrary, he that hath alwayes a laughing countenance, and is given to too much geſture and mirth, is taken for a lewd perſon; and therefore this muſt needs be eſchewed: Alſo he muſt be juſt, and bear himſelf upright in all his buſineſs and affairs, &c.

In his Book *De decenti ornatu*, he ſaith, *A Phyſitian being a Philoſopher, is equal in ſome reſpects unto God. Item*; It is decent that the Phyſitian be Gentle and Courteous, for Rudeneſs and Churliſhneſs are greatly miſliked, as well of the Whole as of the Sick. He muſt often viſit his Patient, and be diligent. He may not declare all things to his Patient, but ſome things he muſt keep cloſe from him, and muſt comfort him with a lively and merry countenance. And ſometimes to with-draw him from his fond deſires, he muſt rebuke him, in reſiſting with ſharp words; and ſometimes again he muſt intreat and comfort him, with a dexterity and gentle perſwaſion. And yet notwithſtanding he may not alwayes tell him of his preſent ſtate, nor what ſhall become of him.

Thus much I have brought out of *Hip-*

pocrates to testifie and declare the Office and Condition of a Physitian. Now something will I bring out of *Galen*, who in his Book intituled, *Quod optimus medicus idem est & Philosophus*. Declareth plainly by the very title of the Book it self, what learning a Physitian ought to have. He saith also in his Book *De Antidotis*. That a Physitian if it be possible ought to have the knowledge of all Hearbs, if not, at the least he ought to know those which he commonly used. Again in the Commentaries upon the first Book of *Hippocrates*, *De morbis vulgaribus*: The Physitian, saith, he ought in any wise to have a respect to profit and help his Patients, and if he cannot, then at the least wise that he hurt them not.

Item upon the 6. Book *De morbis vulgaribus*, he saith, Albeit that the Physitian be Gentle & Courteous, Sober and also Merry, yet nevertheless he ought not to minish his Gravity, for unless the Patient have in Reverence and Estimation his Physitian as a God, he shall never follow & obey his Counsel, it will be therefore very decent, that the Physitian do not so abase himself and flatter, that he bring himself in a contempt: Nor again, as it were another *Callianactes*, shew himself hoggish and rude. And that

shall

shall be easily bring to pass, if in his countenance and talk, and all his honest behaviour, he retain the Gravity of a Physitian, and so do perswade his Patient to follow and keep those things that he appointeth and ordaineth for him.

But now least I should be too tedious in alledging many Authors; I will come to those of our time, and namely I will bring that man of high Learning and famous Memory, Master Doctor *Silvius*, who sometimes was the publick Reader of Physick in the University of *Paris*, having daily at his Lecture little less then a Thousand Auditors (or as they call them, Scholers) of the which I being one, may plainly testifie it to be true. The same *Silvius* saith in his Book, *De ordine legendi libros. Galeni & Hippocratis.* That a good Physitian must have all these Properties.

First, he must be naturally bent and given only to Truth, all the dayes of his Life, he must be Circumspect, Discreet, and of a good Pregnant Wit and Memory.

Secondly, he must have a sound and healthy Body, and must be able to abide great Pain in Studying.

Thirdly, he must be endued with great Riches, or at least he must have sufficient to live by.

Fourthly, he muſt have and get his Learning of the beſt learned men of his time, who diligently, even from his Child-hood, muſt inſtruct him with theſe Sciences: *Grammar*, *Logick*, *Muſick*, *Aſtronomy*, and chiefly (as *Plato* counſelleth) *Arithmetick* and *Geometry*, and alſo *Philoſophy*.

Now to come to my chief intent and purpoſe, and (as they are wont to ſay) to the Principal: Theſe things above rehearſed, well weighed and conſidered, what hope may there be conceived? What foundation and ſtay may be had? Yea, what ſecurity and ſafeguard is there in theſe ſort of fellows, which now a dayes almoſt in all places ſo raſhly, ſo fondly, and ſo wickedly do abuſe the noble Art and Science of Phyſick? Where is their great and manifold Knowledge of the Tongues, of the Liberal Sciences, of Philoſophy, of Anatomy, of the Simples, of the Compound Medicines, and of the Temperatures or Complexions? Where have they ſtudied? Of whom have they learned their Science? (if I may call it a Science) What Authors have they ſeen or read? Many of them will Anſwer and ſay unto me thus: Sir, Although we have not this exquiſite Knowledge that you require in us, yet we have had Experience of many things,

things, we have English Books enough to teach us divers Medicines for divers purposes; yea, and some of us have a Gift of Nature to heal many Diseases.

I Answer, That your reasoning is fair, but it is grounded upon a very slender & feeble foundation. For first, as touching your Experience, How can it be good unless it be joyned to Knowledge and Science? What though you have given a Medicine: As for example, a Purgation to purge Fleam to any man in the Winter, supposing that man to be somewhat aged, of a Flegmatick Complexion, using much flegmatick meats, much sleep and much rest: and that the said Purgation hath taken good effect and wrought well, all this supposed: Let the like Medicine be given in the Summer to a man of another Complexion, of another Diet, and of another Age; yea, supposing this, that it be given to the self-same man in the Summer; Shall the same Purgation (think you) take such effect and operation, as it did afore in the Winter? No verily; or else *Hippocrates* that ancient Father and Founder of all Physick (whose sayings and Writings we follow and credit, *tanquam Apollinis oracula*) should have fouly erred, and specially in his Book *De Natura Humana*.

Galen in his third Book, *De methodo medendi*, ſaith, That there be two Inſtruments of all manner of Invention, that is to ſay, Reaſon and Experience. He that knoweth a thing that is invented and found by Experience, and yet cannot tell the Reaſon of it why it is ſo: plainly declareth to know it only by Experience. But that he may underſtand how much he erreth, let him give Ear unto me a while, for I mean to talk a few Words with him, which follow only Experience. Thus much *Galen*; what he ſaith after, I leave it, leſt I be to tedious.

The ſame *Galen* alſo upon the firſt *Aphoriſm* of the firſt Book of *Hippocrates*, The Experience (ſaith he) of Phyſick is dangerous, (which be alſo *Hippocrates* words) for the Material ſubject of Phyſick is no tile Stones, or common Stones, Dirt, Wood, or Leather, as they are of other Crafts and Sciences, in the which you may make or mar any thing without danger. For if you ſpill a piece of Wood or Leather in miſ-handling it, there is no danger, but only a little loſs or dammage, which is ſoon recovered again by diligence. But to prove things in mans Body which be not afore approved by Learning and Experience, is not without danger of Death.

Now

Now as concerning your second Reason, by the which you affirm to have many English Books that teach you Physick: I answer, that the English Books teach nothing of the true foundation of Physick. For if there be any that do it, how can it be well understood without Logick and Natural Philosophy. For *Aristotle* saith, *Ubi desinit Physicus, ibi incipit Medicus.* A man must first peruse Natural Philosophy, before he enter into Physick.

I do not deny but to have some Books of Physick in English, specially of the Simples, well and cunningly set forth for Chirurgions, Apothecaries, yea, and for sober and wise men that delight to Read in such things, and know not the Latine tongue, is not unmeet nor hurtful. Although I would not wish, nor it is not decent, that either Chirurgion, or Apothecary, or any other man, being no Physitian should practise or use any inward Medicine without the Learned and Approved Physitians Counsel. For as the two Proverbs say; *Falcem ne mittas in messem alienam, Et ne sutor ultra crepidam*, let no man meddle with another mans Corn, but with his own. Let the Shoomaker meddle with his Shooes.

But

But to the purpose, Do you think to have in your English Books, all the perfect knowledge that is required in Physick? Yea, have you the tenth part only? We could never have it yet in Greek and Latine perfectly (notwithstanding we have it now better then ever we had it before) how then should you have it? If English Books could make men cunning Physitians, then Pouch-makers, Threshers, Ploughmen, and Coblers might be Physitians as well as the best, if they can read.

Then were it a great folly for us to bestow so much labour and study all our life time in the Schooles and Universities, to break our Brains in reading so many Authors, to be at the Lectures of so many learned men; yea, and the greatest folly of all were, to proceed in any degree in the Universities with our great cost and charges, when a Sir *John* lack Latine, a Pedler, a Weaver, and oftentimes a presumptuous Woman, shall take upon them (yea, and are permitted) to minister Medicine to all men, in every place, and at all times. *O tempora! O mores! O Deum immortalem!* To what purpose have the Universities been erected and founded in times past? To what purpose have they so many goodly privi-

ledges

ledges Granted unto them of all Princes, successively from all ages? what doth it prevail for us that be Learned to proceed (as I said) in any degree of Master or Batchelour, or Doctor, and so to be Allowed and have Authority to use our Science? When every Man, Woman, and Child that list, may practise and use Physick (*idque impune*) as well as we? And so, many times, not only hinder and defraud us of our lawful Stipend and Gaines: but (which is worst of all, and too much to be lamented) shall put many in hazard of their life; yea, and be the destruction of many. Is this tolerable? Will the Magistrates alwayes wink at this? Shall there never be no Reformation for such abuses? God of his great mercy grant that once they may be reformed. For if they be not, verily it will greatly discourage men of learning hereafter to apply themselves to the study of Physick, whereby the help, succour, and safeguard of many a sick man, Woman, and Child, shall be hindred and secluded: Yea, and many shall fall in danger, and be sick, which otherwise might be preserved from all Sickness by the right ministery of Physick. For Physick is appointed not only to expel Sickness, but also to preserve the Body in Health.

But

But now to the third part I anſwer: You ſay, that you Heal many times by the gift of Nature: I pray you tell me what you mean by Nature. Perhaps you underſtand by Nature, a natural Inclination or Diſpoſition, given by the influence of Starres and Planets, (as I do not deny, but that we may be the better moved and inclined to any Art by their influence) yet is it not a meer gift; but only a Diſpoſition, and as it were a Dexterity and natural towardneſs to Heal ſome kind of Diſeaſe: which thing notwithſtanding is oftentimes done more by chance, then by any certain Method, or Reaſon. For verily, have you never ſo good a Wit, Diſpoſition and Inclination to any Art: yet if you apply not that Art, and exerciſe your ſelf in it earneſtly, and continually, and ſpecially in this Science of Phyſick (which can neer be well uſed without great ſtudy, and the knowledge of divers other Sciences, as I have ſaid before) your doings ſhall be but Raſh, Vain, and of ſmall Effect. For as the Philoſopher ſaith: *Scientiæ nobis, non innaſcuntur, ſed acquiruntur*, The Sciences are not infuſed in us at our Birth, but are gotten afterward: And Science is thus defined in Logick: Science is an habit, (that is) a ready, prompt

and

and bent Disposition to do any thing, confirmed and gotten by long Study, exercise and use. Therefore the natural inclination by the influence of the Starres can profit but little, unless you apply your self with great Diligence and Study to that kind of Science or Art that you intend to practise and follow.

But if you understand (by Nature) God: I say plainly, that God doth not give the gift of Healing to any wicked people, but only by a special priviledge to those only that be of a most Pure, Sober, and Holy Life, as we read of the Apostles, and some of the Prophets. And as Saint *Paul* saith, in the first Epistle to the *Corinth. the* 12. *Chap. To some is given the Gift of Healing by the Holy Ghost.* So that to Heal by this manner of means, is not commonly to use Herbs, Roots, or any other drugs bought at the Apothecaries shop, or to take any Money or other Reward for the Healing. For this kind of Healing is the meer Gift of God, working in those (to whom it pleaseth God to give it) without any Labour or Study. We hear of none now a Dayes, that hath this Gift of Nature (I mean of God) saving only the Kings of *England*, and the French Kings, which, as the excellent Doctor *Ta-*

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gultius faith, in the firſt Book of his Chyrurgery, have a ſpecial Gift to heal the King's Evil, called *ſtruma* in Latine.

Therefore I Conclude, That howſoever you make your Argument, your profeſſion and practiſe in Phyſick is nothing worth, but rather is falſe, deceitful, unjuſt, unlawful, and not any longer to be ſuffered.

I could now, if I were not too tedious to the Readers, bring and alledge out of the Authors of Phyſick, certain notable Examples of many raſh and dangerous Cures, that hath been done by many ignorant and lewd perſons in times paſt, if it were not that the daily Examples appeareth (alas) too much before our eyes in theſe our dayes.

I will ſay nothing now of the City of *Salisbury* where I dwell, what abuſes hath been, or be there now, concerning the Art of Phyſick. A Reformation hath been made there, not very long agone, as touching ſuch matters; but yet all things are not ſo well brought to paſſe as I could wiſh, and as I think good they were. I delivered once, certain *Articles* concerning the honeſt and lawful uſe of Phyſick, unto the Right Reverend Father in God, my Lord Biſhop of *Salisbury*, which *Articles* being (at the leaſt

least in my judgement) good and lawful, if it would please his Lordship, yea, and all other most Honourable Bishops, each of them in his Dioceſs, to admit and put in execution: I would ſuppoſe, *imo*, I would believe that Phyſick ſhould be better and more honeſtly, truly and juſtly uſed and miniſtred then it is now in theſe dayes.

And becauſe that I would that every man ſhould ſee and know what *Articles* they be that I delivered, I have thought it good to take a Copy of them (which notwithſtanding I have ſomewhat altered) and rehearſe them here in order.

Seven *Articles* concerning the Miniſtration and uſe of *Phyſick*.

I. *IT were very meet, expedient and neceſſary, That no Phyſitian ſhould practiſe Phyſick in any Dioceſs, unleſs he were firſt allowed by ſome Univerſity: or at the leaſt having ſufficient Learning in the ſaid Science, he were allowed and licenced by the Biſhop or his Chancellor in that Dioceſs wherein he dwelleth.*

II. *It were good and neceſſary, That no Chirurgion ſhould practiſe his Chirurgery, unleſs he could Read and Write, and had Knowledge and Experience in the Simples belonging*

belonging to his Art. And that he presume not to let Bloud, or undertake any hard Cure, without the Physitians counsel, if he may conveniently have it.

III. That no Apothecary should minister of his own Head, or ordain any Purgation or other Composition of Physick for any man: or that he should prepare and make any Purgation or notable Confection, without the Physitians advise and Counsel, unless that the Physitian had first seen and viewed the Ingredients, whereof the Compositions are made, and specially the Purgations.

IV. It is not decent nor profitable for the Common-Wealth, that any Ignorant Lewd or Ill suspect Person, be he Man or Woman, should be suffered to Make, Sell, or Minister Medicines to any Body, but that such kind of Persons (being duly Examined and Convicted by the learned Physitians of the Dioces) should have condigne Punishment appointed them.

V. That no Physitian do take upon him the name of any degree of Schoole, as Batchelour, Master of Art, or Doctor: or cause and permit any Writer, or Printer so to term him, unless he can approve it to be so indeed by any University.

VI. That

VI. *That no Midwife should disdain to come to aske Counsel of the Physitian, as often as any Woman being in Labour of Child, is in danger. It were good also that the Midwives were first Sworn, before they take upon them their Office.*

VII. *It were also Good and Expedient, that (as the use of* London *is, granted by an Act of Parliament) that the Physitians in every other Dioces, one, or two, or more, should have Licence, to search and view the Apothecaries shop once a Yeer at the least, and see whether their Stuffe and Medicines be good and lawful or not.*

These Articles above rehearsed, I thought good here to alledge, (although under Correction of my Superiors) because that some occasion may be given to reform the Enormites and Abuses in the Science of Physick. And here let no man think, that I mean to speak any thing in any Point against the Priviledges and Liberties granted by an Act of Parliament to the Company or Corporation of the Physitians of *London*, for I mind not, nor may not meddle with their Priviledges.

Many there are, that bear themselves very stout, upon an Act that was made by King *Henry* the 8. in his daies, affirming that

Act to make full and wholly in all Points for their Purpose, but they are foully deceived and far beyond the mark that they shoot at. For whereas the Act presupposeth in them a knowledge of the Simples, as of herbs, roots, and waters, and of the vertue and operation of them. Alas, they can scant tell what a Simple meaneth: There be a great number of them that knoweth not these common Herbs, *Buglossum, Apium & agrimonia*, for instead of *Buglossum*, which is Bourage, they will take Bugloss, being deceived by the sound of the word: for *agrimonia* the true *Eupatorium*, they will take *Eupatorium Mesue*, which is described of *Dioscorides* under the Name of *Ageratum*; for *Apium* Parsly, they take commonly Smallage: for *Scolopendria*, called otherwise *Ceterach*, they abuse Harts-tongue. And to be short, I my self have seen some Apothecaries take for the Root of *Rubia*, the leaves of *Rubus*: for the Root of *Mandragora*, the Root of *Gentian*: for *Hematites*, *Amethystus*: for *Sempervivum minus*, the Hearb called *Thrift*, or great *Stonecrepe*, they have taken little *Stonecrep* in making their *Populeam*.

To the purpose, whereas the Act presupposeth a Speculation or Practise; they Practise

ctise at a venture a thing which they know not; whether it be Cold, or Hot, Dry, or Moist.

Item, whereas the Act giveth them Licence to minister Drinks for the Stone, Strangury, and Agues: They know not the Stone in the Back, from the Stone in the Bladder; neither whether the Stone may be wasted & broken by Drinks and Powders, or had out by Incision. Moreover, they know no difference between a Colike & a Stone: for they name them both one, whereas they be two sundry Diseases.

They know not what *Strangaria* is, nor how many manner of wayes it may be engendred in the Body.

They can scant discerne a Tertian Ague from a Quotidian. As for the mixt and complicate Agues, they know not what to make of them; They call them new Diseases, because they can give them no other name.

Now verily, if these jolly Fellows had but that knowledge only, which the said Act presupposeth them to have, it were not so great a danger, if they sometimes were permitted to give some Medicines for the foresaid Diseases. But I pray you, how many of them have that little knowledge? which

knowledge is but little indeed in Comparison of many other Sciences, which be not only profitable, but also necessary to attain the noble Science of Physick. If the other Acts which have been made for the Reformation of Physick, be well Scanned and Conferred together one with another, it shall plainly appear, that the aforenamed Act, shall not make so greatly for their purpose, who by Ignorance and Rashness to use to practise Physick at their pleasure.

Verily I much marvel at one thing, that many which be of the higher Sort, reputing themselves to be of no small Gravity and Wisdom will sometimes give Credit to such lewd Persons, Counterfeiting the Physitians. Indeed, I suppose that they be partly Deceived by the vain Perswasions and fair Flattering speeches of such fellowes. Their Communication is so fair, sweet, gentle, pleasant and amiable; and their Promise and Warranting so Earnest and Great, that they will go nigh to Deceive the wisest man that is, if he have not the more Grace, and be very ware of them. And the better to Allure the simple People unto them: They will say to him whom they do take in hand; Sir, I will none of your Money now until you be Whole, I will have Money of you only

only for the Medicines which I must Occupy for your Disease. They will lightly warrant every man to Heal him, of what Disease soever he hath; and for all Diseases they have commonly but two or three sorts of Medicines, and yet most commonly they be Purgations or Vomits.

They Purge so much and so often, that they Purge many times, as well the Soul out of the Body, as the Money out of the Purse.

Moreover, these Fellows will also (to have the more credit given unto them) name themselves after some great Learned Mans name. Sometimes they fain themselves to be of some strange Country, and will Counterfeit their Language (as I know one in *Salisbury*) and look to be called by some Name of Dignity or Worship, as Master, Gentleman, Domine, Doctor, and all to deceive the people.

O, I would wish that every man would take heed, and I beseech God that every man may beware of such false Physitians, which may be likened to Wolves or Foxes, Clothed outwardly with Lambs skins, but inwardly are full of Subtilty and Deceit. Many perish through the yeer at their Hands, whereby the good Science of Physick is brought into an Obloquy and Reproach.

Many learned Doctors of our time have

in their words envied greatly against these abuses, and have wished some punishment to be established by the Magistrates, unto such as wickedly and without all reason misuse and practise this Science.

Here I could also somewhat touch some of the learned Sort, which although they bear themselves never so stout, and appear to men to do all things well, yet nevertheless, they halt sometimes on both sides: They see and know many abuses in the Apothecaries shops, and yet they wink at the matter, and are loth to displease the Apothecary, who perchance is their Friend. But the Proverb saith; *Amicus Socrates, Amicus Plato, Amica tamen magis veritas*, The truth ought to take place in all things, and above all things.

There be also many Physitians that think themselves so profoundly Learned, that they beleeve that no man is able to match with them in Learning, they be so arrogant and scornful, that although the Patient be content to have the Counsel of two or three other Physitians to consult and confer together of his Disease, yet they will not willingly grant to it, but rather disdain to confer with any other, the which perchance are sometimes a great deal better Learned

then

then they are. They remember not what *Hippocrates* their Master saith, in his Book *De præceptionibus*, who being in Latine translated saith thus, *Nec vero indecore se illegeret medicus, &c.* The English is thus, That Physitian shall not do amiss, nor behave himself uncomely, which being perplexed in the business about his Patient, and doubtful for want of perfect knowledge, do cause other Physitians to be called, that by common deliberation, and conferring one with another, the Patients affairs may be duly examined and known, so that they may be as co-adjutors (that is to say, helpers one to another) to provide for some remedy. Some there be also (lest that other men should learn their cunning) that will rather scribble them a Receit, and will make such dashes and strange abbreviations in their Bills, that their Writing seemeth rather to be Arabick, or like the Writings of the *Cabalists*, then Latine. I fear me that they that Write so, are ashamed of their own Occupation, and fear lest that if they should Write plain, their errors and faults should be espied. He that is a plain man will deal plainly, will speak plainly, and Write plainly.

Some there be also that be so stiffe neck-

ed and Heady in their opinions, that they will be of no man gainsaid in any wise, no, and if you bring them never so good a reason, although you alledge them never so many Authorities.

But I say, *Plus vident duo oculiq; unus.* All the Wit of the World lyeth not in one mans Head. Therefore to conferr together upon a Matter, it doth oftentimes great good, and no man (be he never so well Learned) ought to refuse it, as often as Time, Place, or any other occasion shall serve.

Also some Physitians there be, that be so Greedy, and of such an unsatiable Desire, that they care not in what Danger they cast themselves, what Shame and Damage they sustain, so that they may have many Cures, where sometimes one would suffice them well enough, and be more perchance then they can well bring to pass. They be so Covetous that th y would have all, and do all themselves, and they envy many times at other honest men having Cures, when they have none. Thus doing, Verily, they bring themselves in great Contempt, and doth as it were Abate and Blemish the Honourable Science of Physick, which requireth rather to be Sought earnestly with great Sute, with Humility, Reve-

rence

tence and Paying, then to be offended, and as it were objected undiscreetly to every man, and in every place, like a blind Harpers Song, or a Pedlers Pack. The common Proverb saith, *That offered Service Stinks*. And I have heard oftentimes say, That Physick unless it be earnestly sought & well paid for, it will never Prosper nor Work well with the Patients: I mean not by this that the Physitian must be alwayes liberal and merciful to the Poor, on whom his living dependeth not, but on the Rich.

Now to conclude and finish this first Part, I will leave to Intreat any more of Physitians, (except as occasion shall serve) and now in the next Part following, I will speak of Apothecaries, and touch somewhat their abuse and negligence.

Whosoever will read any more of the Tokens and Qualities of Foolish and Blind Physitians; Let him read a little Book of mine, Printed many yeers since, which is Intitled: *A Great Gally lately come into England*, out of *Terra Nova*, laden with Physitians, Apothecaries, and Chirurgions, *&c.* made in Form of a Dialogue.

A DETECTION

A DETECTION OF SOME IGNORANT APOTHECARIES.

The Second Part treateth of the Ignorance and Preſumption of certain Apothecaries.

IT is not unknown to many men, and ſpecially to thoſe that be truly & exactly learned in Phyſick, that there hath been, is now, yea and ſhall be (if ſome good order be not taken) great abuſes among Apothecaries, in handling, keeping, chooſing, & dreſſing their Drugs and Medicines. Inſomuch that it is ſuſpected of moſt part of men (and I pray God it be not ſo indeed) that among all other mechanick Arts or occupations, the greateſt and moſt crafty Deceit that is, or may be in Apothecaries. Howbeit, I am not Ignorant, but that within theſe few yeers, ſome Apothecaries, by the help and counſel of good Phyſitians,

have

have gotten and provided them better ſtuffe & Simples to make their Compoſitions, then they were wont to have afore.

And I beleeve verily, that if every Apothecary would endeavour himſelf to buy no ſtuffe, but that ſhould be pure and good: there would be a great many, that would give better credit to Phyſitians and Apothecaries, and have a better hope in them, then they have now a dayes, and all becauſe they miſtruſt and ſuſpect ſo much the Apothecaries ſtuffe and Confections. Indeed, as Covetouſneſs is the root of all Evil, ſo many Apothecaries there be, that more for lucre ſake and greedineſs of Worldly goods, do prepare their Medicines, then for any care that they have, to deal truly with the poor Patients and ſilly Souls that be in Pain: The Phyſitian many times ſhall ordain his Counſel, and appoint certain Medicines for his Patient; which Medicines he knoweth certainly ſhall do him good, being taken and uſed according to his Counſel, yet the ſame Medicines being taken and bought at the Apothecaries, and made many times of naughty ſtuffe, or not well prepared, ſhall not only do little or no good at all, but ſhall alſo ſometimes put the ſick Body in hazard of his life, whereby ſhall no ſmall

trouble

trouble and ſhame redound unto the Phyſitian, and yet was he not the occaſion thereof, nor in any Fault at all. Some perchance will alledge againſt the Phyſitian, that he may be in the Fault, foraſmuch as he ought to have ſeen the ſtuffe firſt, whereof the Compoſitions are made, and ought alſo to have been at the making and preparing of the Medicines which he ordaineth.

Indeed it ought to be ſo, if all things went well, and ſpecially if the Apothecary be ſuſpected to have ſomewhat a large Conſcience, or that he be of a ſlender Learning and Negligent, and paſſeth not what he doth ſo that he may receive Money. But you muſt underſtand that the Phyſitian cannot alwaies be preſent at the Making or Delivering of ſuch Medicines as he hath appointed. For ſometimes he hath more Patients to look to then one, and perchance he may be twenty or forty Miles from the Apothecary, when he ſendeth his Bill, to him, and therefore cannot be preſent. Many other occaſions there be, that letteth the preſence of the Phyſitian at the making and delivering of Medicines.

We had a ſad paſſage of an Apothecary of late Yeers, who being preſcribed by a Doctor to make up ſome Trochiſes for his Patient

Patient of *Gordonius*, not having them ready, uſed in their room Trochiſes of *Alhohengi in opio*, which the Patient took, and dyed within few Hours after; whereupon the Widdow of the deceaſed Patient, inſtigated by ſome of her Friends, proſecuted the ſaid Apothecary; firſt for Life, and ſecondly, to prohibite him for further uſing his Trade, with two ſeveral Bills and Indictments at the Kings Bench Bar, before that Learned and Reverened Judge, the then Lord Chief Juſtice *Bramſton*, where, with much charge, he was acquitted, in both the ſeveral Trials.

But if the Apothecary be an honeſt man, of a good Conſcience and Learned; or that he hath ſuch a one under him to ſerve the ſhop, that is of like Qualities, It is not then ſo greatly neceſſary for the Phyſitian to be preſent, ſo often as he ordaineth his Counſel for any Patient. For even as a good Tree will alwaies bring forth good Fruit: So will a good Apothecary make and deliver nothing at any time, but that that is lawful and good. But this Queſtion (if a man might be ſo bold) I would fain ask how many good Apothecaries be there in *England*? how many do their Duties as they ought to do? how many are Learned?

how

how many are faithful? and how many are willing and desirous that the Physitians should see their Drugs, and see the making of their Compositions? Many there be that disdain that the Physitian should be present at the making of their Medicines, and who more then the Ignorant, Covetous, and Contentious sort of Apothecaries. The Ignorant thinks (following their barbarous *Nicolans*) that their knowledge (which is meer Ignorance) far excelleth and surmounteth the knowledge of all Physitians. The Covetous are afraid, lest if the Physitians should be present that they should find a great deal of their stuffe to be Sophisticate, corrupt and naught.

There be also another sort of Apothecaries, which be so arrogant and scornful (by reason that they be grown very Rich, God knows how) that they disdain the Physitian, and have him in no estimation, whereas in the ancient time, the Apothecaries (as *Galen* and others witness) were but as Servants and Ministers unto the Physitian. *Galen* in his Commentaries upon the sixt Book of *Hippocrates*, *De morbis vulgaribus*, saith thus, The Ministers of the Physitian, are gatherers of Herbs, Ointment makers, Cooks, Plaister-makers, Clister-givers, Scarifiers,

Scarifiers, Letters-out of Bloud; but if we (meaning of Physitians) after that we have learned these things do also sometimes the like, we do no otherwise then even as a Master or Governour of a Ship, which having knowledge in Rowing, do Row when he list, and get up to the top of the Mast, and doth all other things belonging to the Marriners Art and Office. Thus much *Galen.*

I need not to alledge here the 38. Chapter of *Ecclesiasticus*, where every man is Exhorted to honour the Physitian, how much more then should the Apothecary honour and reverence him, which hath chiefly his living by means of the Physitian. I speak not this because I, or any Physitian should seek Worldly honour, or Vainglory. For above all things, *Soli Deo sit honor & gloria*, yet notwithstanding, according to St. *Pauls* doctrine, we ought to *give honour to whom honour belongeth.* I remember that when I was yet in a manner but a Boy in age, studying beyond the Sea, after a year or two that I had studied in Physick; I would sometimes (for to have the better knowledge in Simples) resort to some Apothecaries shop or other; But I should no sooner come into the shop (specially of Learned and Honest men)

men) but that immediatly the Apothecary would welcom and receive me with all Courtesie and Humanity, and rise from his Seat to give him room, and so would entertain me with all Gentleness that he might. This did they to me being then but a Scholer, what would they do think you to the Masters and Doctors of Physick? What maketh many Apothecaries now a dayes to set so little by the Physitians? This is one chief cause, they play the Physitians themselves, they give and Minister Medicines of their own Devise (God wot a mad Device) indifferently unto all men, yea, and the more Ignorant they are, the more bolder they be; for who is so bold as blind Bayard? Many of them will not stick to look in Waters, and not be ashamed even in the Physitians presence, to ordain this or that Medicine for any kind of Disease, If any Physitian do gently admonish them of their Fault, and specially of giving of Medicines after their own Brain: They will say, That they may as well prescribe Medicines, as Physitians sometimes do use to make them. They may play (say they) as well the Physitians, as the Physitians play the Apothecaries, as though a Physitian and an Apothecary were all one. Indeed a Physitian

Phyſician may be an Apothecary, and have an Apothecaries Shop within himſelf in his own Houſe, or may be a Chirurgian, and heal Wounds or Sores, or let blood himſelf: *Sed non è diverſo.* An Apothecary or Chirurgian being only of that Art may not be a Phyſician, unleſs he abuſe and falſely exerciſe againſt all reaſon and conſcience, (as many do now a daies) the Science of Phyſick.

To prove that a Phyſician may make, or cauſe to be made, in his own houſe any kind of Medicines: it may partly appear by the Authority of *Galen* before alledged, and alſo by divers other famous Authors of our time, and ſpecially by *Manardus* and *Silvius*. *Manardus* in the Prologue prefixed to the Annotations upon *Meſue*, hath theſe words: *In times paſt*, ſaith he, *the Phyſicians themſelves prepared the Medicines at their own Houſes, and ſo kept them ready made, the which as often as need required, according to their diſcretion, & the neceſſity of the ſick, they uſed. But ſince theſe five hundred yeers or thereabout, this kind of buſineſs hath been committed or rather derived from the Phyſicians, (not without, as I believe, the danger of the Patients) unto certain which are called Spicers, or Apothecaries*, &c.

Jacobus Silvius in his Book *De Medicamentorum ſimplicium delectu*, in the beginning, whereas he ſpeaketh of the Duty of an Apothecary, declareth, that as well *Galen*, as other Phyſicians, did oftentimes prepare the Medicines themſelves. It is lawful then for the Phyſician (if he liſt) to prepare the Medicines for his Patient himſelf, but not lawful for the Apothecary to uſe or practiſe Phyſick for any man, of his own Head.

I would wiſh that the Apothecary, as he is deſirous of gain, ſo he would provide all things neceſſary for his Shop; and chiefly, and firſt of all, for the chief guid and Inſtrument, that ſhould rule all the reſt, I mean the Book of *Bernardus, Deſſenius, Cronemburgius, De compoſitione medicamentorum*: The perfecteſt in my opinion, and moſt excellent Book, I believe, that ever was made for Apothecaries. Howbeit, becauſe that ſome Phyſitians uſe the Compoſitions of other Authors; I would wiſh alſo that the Apothecary might not be without the Diſpenſatories of *Valerius Cordus*, of *Fuchſius*, or *Nicolaus Mirepſus*, or the two Books of *Silvius*, containing the chooſing, keeping, and making of Medicinces commonly uſed: Or, *Examen-*

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tam ſimplicium quæ compoſitorum, *Antonii Muſæ*, and not to follow ſtill their blind *Nicolaus Præpoſitus*, which is full of errors. It were meet and convenient alſo, that the Apothecaries had divers ſearces to ſearce their Powders in, for ſome Powders would be ſearced very finely, as they that be Dieuretick Powders, and moſt part of Electuaries: ſome more groſſie, as the moſt part of Laxatives, exeept *Agarick* and *Colocinthis*.

The Apothecaries have many excellent Diſpenſatories to direct them, in making up their Compoſitions, as the new *Pharmacopæa Londinenſis*, that of *Renodeus*, of *Banderon*, *Bartaldus*, the *Pharmacopæa Auguſtava* and others: As alſo in Chymick preparations, *Grulingius*, and thoſe two excellent pieces ſet forth by *Schraderus*, his *Pharmacopæa* and *Quercitanus Rodivivus*, and I preſume there may be ſomething of worth, in the Manuſcript I have added at the end of this Work, though he have failed in his Judgment; in holding that there is no Salt in Vegetables, *&c.* But *Guinther Bilich* hath given a ſufficients Refutation to that Folly, nor can he blemiſh well deſerving *Quercetan* with the Title of ☞.

Of Morters likewiſe they ought to have divers ſorts for all precious Stones, (that enter into Electuaries) and Coral ought not to be beaten in a Brazen Morter, but Pearls and Coral ought to be beaten in a Morter of White Marble; precious Stones muſt be made or grinded into pouder upon a Stone called in Latine *Lapis Porphirius*, which is a kind of Red Marble. Alſo Purgations, or Electuaries, Pills or Pouders mingled with any Syrrups, ought not to be diſſolved in Brazen Morters, but in Morters of Glaſs, of Stone, or of ſome fine Wood; yea, and if they were of Silver for great Men of high degree, it were beſt. Alſo ſome Ointments ought to be made in Morters of Lead.

It were good alſo that no kind of poiſon ſhould be pounded or diſſolved, in any Morters occupied daily for the Shop, for thereof hath chanced much evil.

I had almoſt forgotten one great abuſe, that a great many Apothecaries commonly do uſe, that is, when the Phyſician preſcribeth any *Lozengis* to be made. The Apothecary will put to the pouder as much Sugar as pleaſeth him, inſomuch that many times the *Lozengis* ſhall have little other taſte, then of the Sugar only. *Fuchſius* wil-

leth

ſeth that there ſhould be thrice as much Sugar as is of the pouder, ſo that to three dragms of pouder, there ſhould be put but an ounce and a little more of Sugar, howbeit that ſome other (as he ſaith) do uſe to put four times as much Sugar as of the pouder. But *Deſſennius Cronemburgius* ſaith, that the Phyſicians put commonly a pound of Sugar, to an ounce of pouder. And to ſay my fancy and opinion, it were good that the Phyſician ſhould determine and appoint in his Bill, how much Sugar he would have to be put with the pouder. For ſometimes it happeneth that he ordaineth a Purgation in *Lozengis*, ſometimes he uſeth ſome bitter pouder, or very hot pouder, that requireth of Sugar more or leſs, but commonly bitter or very hot pouders require more Sugar; and pleaſant and temperate pouders require leſs: but many Apothecaries are very liberal, which ſpare for no Sugar when they make *Lozengis*, becauſe they have more reſpect to their profit, than to the Patients health. Again they love to make all things pleaſant and ſweet, ſo that ſweet money may come in. And it is moſt commonly ſeen, that the moſt part of ſick folk abhor ſweet things. Wherefore they ſhould know of the Phyſician

(unleſs he determine it himſelf in his Bill) how much Sugar he will have to the making of the Medicines.

Now at the laſt to conclude, becauſe that Apothecaries ſhall know partly what their duty is, I will here recite what *Silvius* ſaith in the place before alledged, of the Apothecaries duty. And thus I have tranſlated his Preface into Engliſh.

Although that the Apothecary be endued with many things, commonly agreeing with the Phyſician: as with natural diſcretion, a perfect knowledge of the medicines, a great diligence in all ſuch things as belong to his office, and an honeſt behaviour; yet nevertheleſs many things are in a manner peculiarly appropriated unto him, the which ſometimes were alſo proper and belonging unto the Phyſicians, at what time they themſelves prepared the Medicines, as it appeareth that *Galen* ſhould have done it, in many places by his writings. Now ſuch things as be proper to the Apothecaries are theſe: The chuſing Medicines, gotten by diſcretion and long experience, afterward the manner to keep them, and to know the time when they are in their power and force, or when they are deſtitute from all vertue and corrupt. Alſo,

ſo, how and in what manner each of them ought to be uſed, either by it ſelf alone, or elſe to ſeeth it, or to bruiſe or break it with other, or to prepare it after another ſort and maaner. It is alſo convenient and neceſſary for an Apothecary to know his Grammer, becauſe he may the better underſtand the Compoſitions of the ancient Writers, and alſo the daily Writings (which commonly they call Receits or Bills) of the Phyſicians. In the which Writings, if perhaps they have written any thing more or leſs than need is, or more unpleaſant than the Apothecary conjectureth in himſelf, to be meet and convenient for the Patient, he then may gently tell and warn the Phyſician of it.

Moreover, we would that the Apothecary knew perfectly the Art and Science to chooſe the Medicines, to prepare them, and to compound them together. We would alſo have him to be contented with a mean apparrel, to be merry and pleaſant in communication after an honeſt ſort, diligent in the Patients buſineſs, to be no covetous, no laſcivious, no drunkard, nor contentious Perſon: all which things are even in like manner to be obſerved of the Phyſician as of the Apothecary, as *Hippocrates* teſtifi-

eth in his Book, called, *The Office or Duty of a Phyſician.*

And if the Apothecary be endued with ſuch perfections of Spirit, of the Body and alſo of fortune: he will never give any Medicine (ſpecially being of any great operation) to any Man, unleſs he be of the counſel of ſome cunning Phyſician; nay, neither will he give any thing, be it of never ſo little effect, knowing not the vertue of it. For oftentimes certain Remedies, although they ſeem but weak, yet nevertheleſs through Quantity, Quality, and ſpace of time being unwhalſome, are the occaſion many times of great diſeaſes, and taketh away the right and true way of curation: Inſomuch that under ſuch remedies, the Body being in cure, will ſoon afterward bear greater and ſtronger Remedies, but not convenient to the purpoſe. Moreover he ſhall not commit any Crime or Fault, either for Love or Favour, or Hatred, or Fear; nor he may not be ſeduced by Money or led by Ignorance. Neither ſhall he give at any time any poiſon, or things procuring abortion, any thing that is too old or out of uſe, things altered and Sophiſticate, or any *Quid pro quo*. But he ſhall ask Counſel, (as often as need ſhall require) of a well learned Phyſician, what

what Simple or Compound Medicine is to be ſubſtituted and taken, for lack of one or the other. He ſhall not augment nor fortifie the quantity of any ſtrong Medicine to the intent that by a greater evacuation enſuing, men ſhould ſuppoſe him to have better Apotheries Stuff than any other.

O! I would the Apothecaries of theſe dayes, would frame themſelves to this rule, and the Phyſicians likewiſe on their ſide, Phyſick ſhould not then be ſo little regarded and ſet by, as it is now a dayes, yea by opprobrious words and taunts deſpiſed of a great many. Now I beſeech the Almighty and living God, that once he would make the Phyſicians and Apothecaries to be of that deſire and mind, that each of them would rather wiſh to be indeed then to ſeem, or to be called a right, good, and honeſt Phyſician, a right, good, and honeſt Apothecary.

And if they do neglect that godly gift and grace, pray God that once ſome puniſhment may be appointed by the Laws and Statutes for them which will enterprize to practiſe a Science (ſo healthy to Mans Body, when it is well miniſtred, and again ſo hurtful and dangerous, when it is ignorantly and raſhly handled)

before

before they know it. Thus much *Silvius*. And here I will make an end of Apothecaries, now to the Chirurgions.

A DETECTION of the Raſh Boldneſs and Ignorance of divers CHIRURGIANS.

The Third Part.

THere be many Chirurgians in this our time, that practiſe Chirurgery, more by blind experience, than by any Science, who in uſing many things appertaining to their Art, know almoſt the vertue and operation of nothing that they do uſe. For how ſhould they know it, when they are altogether unlearned? yea, and many of them there are that know never a letter in the Book. Whereas Chirurgery being counted as one of the chiefeſt parts of Phyſick, having

having his practiſe chiefly in the time of Warr) it were neceſſary that the Chirurgian were not only prompt, feat, and diligent in his doings, but alſo that he were well learned in Phyloſophy and Phyſick, and alſo ſomewhat in Aſtronomy.

But how many ſhall a Man find in a Country that have learning? how many are there that proceed in their Cures truly and uprightly as they ought? not very many I believe. For the moſt part being ignorant and void of all good learning, yea, and know almoſt no part of Anatomy (which is moſt neceſſary for a Chirurgian) cannot ſcarce heal a green Wound, and ſome there be that can ſcant let a Man Blood (which is a handſome and pretty feat, and yet not ſo hard a thing to be done) nor well apply a Ventoſe, called otherwiſe a cupping Glaſs, unleſs they put the Man to pain & trouble. There be ſome that eſteem themſelves ſo well exerciſed and perfect in the Art, that they think that no Cure can come amiſs to them. They will enterprize and take in hand all manner of Cures, be they never ſo hard or incurable: for they have fear of nothing, but Raſhly go to Work in all things. They will cut, they will launce, they will cauterize (which they call fearing

ring with a hot burning Iron) they will Saw off a Leg or Arm of the Body, they will uſe Corroſives that ſhall peirce even unto the hard Bones, and they will make an Iſſue almoſt for every trifle, and for every Diſeaſe, without conſidering the circumſtances of the whole Matter, not weighing the Strength, the Age, & the Complexion of the Body, beſides many other things that are greatly to be conſidered in ſuch caſes. And poſſible it is many times that the Patient hath need of ſome inward Medicine, which the Chirurgian can, nor may well give without the Phyſicians Counſel.

And indeed it were very meet and neceſſary, that the Chirurgian ſhould undertake no hard or dangerous cure, without the Phyſicians advice. Howbeit, as I ſee now a dayes, the moſt part of them do all things, following only their own Fantaſies.

They ſtick not to give Electuaries, Sirrups, and other Medicines themſelves, yea, and Purgations alſo: which thing me thinks is very uncomly. It is not reaſon that he that ſhould be but as a Miniſter unto the Phyſician (as I alledged before out of *Galens* when I teated of Apothecaries) ſhould uſe the part of a Maſter and Philoſopher, and ordain ſuch things as he knoweth not

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the nature of. It is not unknown, that many poor Patients periſheth under ſuch raſh and lewd Chirurgians.

But to ſay the truth, the fault is not ſo much in them, as in thoſe that give credit unto them. For as the World goeth now a dayes, if a Phyſician, or Chirurgian hath a fair tongue, and hath alſo ſomewhat a comly Body, and can ſpeak (I will not ſay flatter) indifferently on every mans ſide, gratifying each man according to his quality, deſire and mind: every man unleſs he be very wiſe and circumſpect, will lightly give ear and credit unto him, and account him for a diſcreet and cunning man. Such a one ſhall lack nothing, he ſhall be welcome, he ſhall have much curteſie and pleaſure ſhewed him, finally, he ſhall have his whole hearts deſirre, (that is money enough) For ſuch Fellows by their ſubtilty and fair tongue, will allure more people unto them, and get themſelves more treaſure in one quarter of a year, than ſhall an honeſt and good *Phyſician* in the ſpace of three years, and all by their fleering face and flattering words. I would to God that all men would bewar of ſuch fellows, & remember the proverb that ſaith: *Dulcis ſub melle ſæpe venena latent.* Under ſweet meats is many times a poiſon

poiſon hid. And as *Virgil* ſaith, *Hinc procul O puery fugite, latet anguis in herba,* Take heed, and flee far hence O Children, for the Snake lyeth privily hid under the graſs.

It is written in the ancient Authors of Phyſick, that in the old time, the Phyſicians were wont to exerciſe Chirurgery themſelves. Howbeit it hath been now of a long time, that the Chirurgians do only exerciſe this part of Phyſick for many conſiderations, and chiefly for this occaſion, as *Hippocrates* ſaith, *Vita brevis, ars vero longa,* The life of Man is ſhort in compariſon of the Science of Phyſick which is long. Therefore becauſe the Phyſicians cannot well give themſelves to Study divers other Sciences, which be neceſſary to Phyſick, and make Medicines, and uſe alſo Chirurgery, and go and viſit their Patients: It hath been thought good that other Men called Chirurgians, (and yet having ſufficient knowledge) ſhould have the office and miniſtery to uſe and apply outward Medicines, and not to enterprize and uſe all Medicines for all diſeaſes both outward and inward, as ſome do, for in ſo doing they go beyond their bounds.

There are excellent pieces of late put forth of Chirurgery, as *Glandorfius, Hildanus,*

nus, *Paracelſus* and others in Latine.

Fœlix Wartius in the Germane tongue.

Reads Works, *Baniſters*, *Wood-hall*, *Parus* by *Johnſon*, and others in Engliſh, *Cooke*.

Chirurgery although it be a Manual Art, yet it hath his ſpeculation, which cannot be had without reading of divers Authors, and eſpecially *Hippocrates*, *Galen*, *Ætius*, *Paulus Ægineta*, and of the latter Writers, *Tagaultius*, *Hollerius*, *Bologuinus* and others. As for *Joannes de Vigo*, whom the Chirurgians of our dayes do now moſt follow; I would not that they ſhould ſo greatly truſt him, becauſe that he is not to be followed and read without great diſcretion and judgment, for the obſcurity and doubts, yea and errors that be in him. He bringeth in many things in his Book, which belongeth rather to the Phyſician to know and practiſe, then to the Chirurgian: as Electuaries, Potions, Purgations, and many other inward Medicines. If the Chirurgian have knowledge in Phyſick, I mean that he know the complexion, the nature of Simples, and the effect and operation of Compoſitions, he may uſe them, elſe not. For if he do, he ſhall do as a blind Man that ſhooteth at a Hare, he ſhall work at all adventures,

ventures, and many times with the danger of his Patient.

I much marvel, why the Chirurgian ſhould diſdain to come ask counſel of the Phyſician, when he hath any hard or doubtful cure, it can be no hindrance to him, and to ſay the truth, it is no great profit to the Phyſician, unleſs it be for ſome rich man. The good Phyſician will uſe the poor as the poor, and the rich partly for his money, as well as for his love and friendſhip. For the Phyſician muſt have his living by ſome kind of perſons. And not only the Phyſician, but alſo the Apothecary and Chirurgian ſhould deal charitably with the poor, and uſe every man according to his capacity. But this I have ſpoken, *Velut obiter*, as by the way: Now to the purpoſe.

Many perchance will ſay unto me, what needeth the Chirurgian come to ask any counſel of the Phyſician for any cure that he taketh in hand, whereas it is well known that the Phyſicians (except one among an hundred) do not uſe to practiſe Chirurgery themſelves, and by this means cannot inſtruct the Chirurgian on that thing, that they know not.

I Anſwer, that the moſt part of the Authors

thors of Phyſick, do treat of Cuirurgery in their Works, and although we meddle little, or nothing, with outward Diſeaſes, yet do we know what belongeth to them, and how they ought to be cured. And I ſay alſo that Chirurgery can never be well practiſed without learning, or a reaſonable way of proceeding which is called in Latine *Rationalis methodus*, the which the moſt part of Chirurgians have not. As for example; A man hath an hot inflammation, or (as commonly they call it) a ſwelling or impoſthume in ſome outward part of his Body, and feeleth great pain. What Remedy ſhall the Chirurgian uſe for the expelling of it? he muſt firſt conſider what is the nature and quality of an Inflammation, called in Greek *Phlegmone*, whether it be ingendred of pure blood only, or elſe mixed with any other humor, what is the cauſe of it, and what be the ſignes?

Now let us ſuppoſe that the ſaid *Phlegmon* be ingendred only of a ſuperfluous blood, and the cauſe Antecedent be *Plethora*, that is, a bundance of good blood in all the body. Now what ſhall the Chirurgian do in ſuch a caſe? ſhall he apply any thing to the ſwelling, without conſidering whether the body muſt be let blood or not? Whether

the ſwelling or *Phlegmon* be yet in *fluxu*, that is a breeding; or *in ſtatu*, that is, in the worſt caſe that it can be; or in the declination, whether or when, he ought to uſe repercuſſives, reſolutions, or both together? The general rule of Phyſick ſaith, that in the beginning of all Inflammations, we ſhould uſe repercuſſives, that is, Medicines to repel, and drive back the fluxion of humors: But I put the caſe that the ſwelling be in the Emunctories, or that one hath the Peſtilence. The Chirurgian perhaps following the general rule, will lay a plaiſter to repel the ſaid inflammation or ſwelling. Doth he well think you? he doth ſo well that either he putteth the patient in great jeopardy or elſe he killeth him.

Wherefore the Chirurgian muſt think that a great many things muſt be conſidered more than one, as often as he undertaketh any cure of weight; and muſt think it no ſhame nor reproach to counſel with a Phyſician in ſuch Matters. For verily I ſay, (to conclude in few words) That no man be he Chirurgian or Apothecary, ſhall never work well without a true method and learning. For look what thing ſoever he taketh in hand, what Cure ſoever he hath, he being deſtitute of learning, ſhall never bring it well to paſs, without the aid, help,

and

and counsel of the learned Physician; for if he chance to do any notable Cure, it shall be peradventure more by hap hazard, than by procurement and diligence. Here I could bring in many other abuses of Chirurgery; as how some pretend and exercise Physick (to their shame, deceiving the People) under the Cloak of Chirurgery; some drive off, and linger out the time, to have the more money. Some be so presumptuous, that they will warrant every Patient, when oftentimes many by their negligence (and for lack of a good diet, or some other good Medicines which should be appointed by the Physitian) die upon their hands. Some when they have done all that they can, and see that their Patient begin to go to wrack, then immediately with all speed, they will run to the Physician with their Patients Water, and then to ask counsel when it is too late, and all because they will shake off the burthen from their own shoulders, to cast it upon the Physicians neck, and to put all the fault in him if any thing chance otherwise than well, that so they may be clean discharged and unburthened from all manner of blame and reproach. Some go from town to town, from market to market to utter their trumpery (their ware I would have said) and to

ſhew their cunning among the homely and ſimple People of the Country.

But all theſe willy and deceitful faſhions are not yet throughly known, nor can never well be, until ſuch time as a Reformation be made by ſome Law or Statute, which I pray God to grant ſhortly, to his glory, the profit of the People, and for the good of the Common-wealth. *AMEN.*

To both Univerſities, Oxford *and* Cambridge, *A Peroration.*

THus much I had (right worſhipful) to ſay
And to declare moſt plainly to you all.
The great abuſe committed every day,
In this our Art, which Phyſick men do call.
The chiefeſt points I have in general,
But only toucht in this my little Book:
He may know all the matter in ſpecial,
Who ſo to it more narrowly will look.

I marvel much, and ſore lament to ſee,
That ſuch abuſe hath been ſuffer'd ſo long,
And is now yet, (it will none other be)
You and we have (methinks) great wrong,
Therefore ye ſhould no more the time prolong,
But ſeek ſome means the learned to defend,
With priviledges, that to you do belong,
And thus doing, you ſhall no Man offend.

I ever had, and have yet at this hour,
A great deſire, both in my heart and mind,
That every good Phyſician to his Power,
Do all things well, ſo worſhip ſhall he find.
But now there are Phyſicians ſo unkind,
To God and Man, that they paſs not a ſtraw
Which of both ends go before or behind,
They are ſo void of truth, and fear of law.

This ſort will now envy with force & might,
Straight againſt me, and this poor ſilly Book.
(Wherefore I pray, defend me and the right)
They will lay wait for me, and alwaies look,
What time they may deſtroy me with their hook,
I mean their tongue ſo venemous and ſharp.
But by Gods grace, and your help, I ſhall brook.
That well enough, and not come in their trap.

Mollibus hæc non eſt, ſed duris dura Securis,
Dura ſecat, damnum mollia nulla ferunt.

FINIS.

To the Reader.

THis Book hath passed some good hands, with good approbation; who reads him shall find learning, but mixt with some tartness, against Quercetan, an Author the Paracelsians generally approve; and it seems, he assents unto Schechius, Salem revera rebus non in esse & accidere terrennis partibus ab igne, but Mullerus and the whole current of the Paracelsians are opposite to his, as some other of his opinion: and if you please to hear Bartoline in his own words, he affirmeth it to be contra omnem sensum & experientiam quæ salem magis vel minus rebus inesse testatur. Et sed non opus est à calore productum, sed calore seperatum. The Book may be useful to young Apothecaries, and out of my good wishes to them, I commend it to their perusing, leaving it to better and more judging censurers.

A TRANSLATION OF PAPIUS Concerning APOTHECARIES.

EVery Medicine whileſt it is entire, hath his temperament, and from thence his perfect and integral ſtrength and faculties.

But for the moſt part, the work is in the preparation of the Medicines. that they may be made fitter and convenienter for Diſeaſes.

For to dry, moiſt are fitter.

To moiſt, dry are fitter.

1. Waters have a faculty of moiſtning, and repairing the Spirits.

2. Spirits quickly and ſtrongly revive, and repair the Spirits.

3 Oyles do ſtrongly mollifie and looſen.

4. Pouders do dry.

5. According to the cuſtome of the ſick, of which one is more pleaſed and delighted with a dry form, and the other with a moiſt.

For the Form ariſeth from the preparation.

That it may work more ſuddainly, by peircing with his thinneſs; and more ſtrongly, whileſt the faculty, which is placed in the thinner parts; is increaſed, thoſe ſubtiler parts being drawn and ſtreightned together, for preſervation ſake, by taking the watry moiſtneſs away, which ſubjects it to corruption. And although often, ſingle Medicines, by their faculties and workings, may ſuffice for one, or many Diſeaſes, yet there is often need of their compoſure, as well for preparation ſake.

1. For many diſtillations have need of infuſions, for the cuſtome of the ſick, of which, ſome ſtand affected to Pills, and other to potions.

2. For the curative ends.

1. Maligne

1. Meligne quality of the Medicine.
2. The troubleſome ſmell or taſte, and the dull ſlowneſs ſtird up and increaſed.

} may be corrected

3. When many Diſeaſes are joyned together, every Medicine may oppoſe his ſeveral Diſeaſe.

Triacle is compounded of many excellent Counter-poyſons, Cordials, and ſuch as make the blood purer, becauſe that ought to be a general Antidote for all poyſons.

1. One preparation is made by reſolving and ſeparating ſome, or every moiſtneſs from the dry earthy part, as in the calcination of Stones, Woods, Coales, by burning, or otherwiſe drying them.

1. Or by drawing forth from an actual moiſtneſs. 1. Spirits, as from Wine, Water, 2. Juyce by expreſſion. 3. Oyle by expreſſion, diſtillation.

2. From a potential moiſtneſs, } Spirits, Oyle, } by Diſtillation.

3. From an actual dryneſs, the moſt thin, ſubtil, and pure earthy parts by a dry Diſtillation, as flowers of Brimſtone are made.

When

When the faculty of the Medicine is drawn, either. { with / or / without } { Smell. / Savour / Colour }

And that is performed by the ſaid, { Expreſſions. / Diſtillations. / Infuſions, / Decoctions. }

ſome times { Infuſion & Expreſſion } are joyned together wth { Diſtillation. / Decoction. }

For the ſame faculty is not in a native Medicine, prepared by the ſaid waies, or manner, for preparation changeth the Temperament, ſome more, ſome leſs. Seeing that eſpecially, on which fire worketh more ſtrongly, doth either leſſen, or conſume the moiſture, and conveyeth in an *Empyreuma*, and ſomewhat changeth the faculty of the fiery heat, ſavour, and taſte, mingling the ſubtiler earthy parts with watry, when with his accidentary heat, it induceth ſharpneſs.

Nor is any Medicine made more perfect and excellent, by any preparation, (ſince to the perfection, in which every thing is created, nothing can be added by art) but made more convenient by certain ends; and yet not alwayes, ſeeing many things are more uſeful and better without preparation, then prepared; as the

1. Bezar-Stone, and raſping of Harts-horn, againſt poyſons.

2. Or the ſame, as if in Hyſterical paſſions, Pouder of Amber by the mouth, and Balſome exhibited below.

Nor doth that preparation alwayes excel, which taketh away the thicker earthy Matter, ſeeing that it is more profitable in many effects, then the thin.

It may be here enquired, whether Medicines, in the Body may be ſo digeſted by nature with the help of heat, as Aliments; and whether every or ſome preparation of Medicines, may ſerve helpful to this digeſtion. The Soul of Man in the act of Concoction (and cure by Medicines) uſeth the ſame Heat, and the ſame Humors, Vapours, and Veſſels, thorough which alſo it conveyeth the nouriſhment, and altereth the faculty of the Medicine, reſolveth the Humors, and by help of the Humors, the earthy parts, and by this means, in this change, and reſolution diminiſheth them, and ſeparateth the thicker parts from the thin.

In like manner the preparation of the firſt Aliment, and Medicament maketh it fit that the Aliment may more eaſily be digeſted by the heat; and heat and the humor paſs thorow the Medicine and draw out his

his faculty, and led it to the affected part; yet notwithſtanding ſome preparation taketh away the vertue or ſtrength, as we have ſaid of calcination. But this eſpecially differeth between either act.

That in the Act of Concoction the temperament of the firſt Aliment is changed into the temparament of blood; but of this in the temparament of the cure of the parts, the ſoul uſeth the temparament of the Medicine, uncorrupted, as much as may be, as well to the changing of the qualities, not natural of the humors and parts, as to the evacuation of things hurtful: ſo as the Medicines may not properly be ſaid to be digeſted, or Concocted.

But there are ſeven principal wayes of Phyſick preparations:

1. *Powdering.* 2. *Melting.* 3. *Expreſſion.* 4. *Infuſion.* 5. *Decoction.* 6. *Diſtillation.* 7. *Extraction.*

1. *Powdering* is, when a dry Medicine is reduced into Pouder, by bruiſing or beating it, that it may be the eaſier with liquor, either ſimply diſſolved or mixed: ſerving whereto, is drying by heat of the Sun or fire; of which ſort alſo is that calcination, which is called reverberation. To many things, in bruiſing them, ſome liquor

is

is added, which prohibiteth the dry exhalation, or vapouring away of the ſmell; as Roſe-water to certain Aromatical Spices; to Muſh. Ambergreaſe, &c. Water to Almonds, leaſt they caſt forth their Oyle; to the ſeed of Wildſeme with Opium, otherwiſe clammineſs hindereth the bruſing, or breaking it; Ammoniacum, Galbanum, and ſuch as are of that kind, are diſſolved in Vinegar, at the fire.

1. There is ſome calcination imperfect, as when all the wrtry moiſtneſs is reſolved in the coals, ſomething aireable combuſtible being left; and when in like manner Hartshorn by a reſolving Water, the greateſt part of the Matter which coagulateth or joyneth together by the help of heat, is reſolved and drawn forth.

2. Other calcination perfect, as when every coagulation is reſolved by fire only, or other helping diſſolvers, without aſhes; as is performed in calcination of Stones, and Mettals, and when woods are burnt into aſhes.

All things calcined, or all aſhes, have a power of drying, and ſome have a greater, ſome a leſſer ſharpneſs.

The vertue or efficacy of drying, commeth: 1. Partly from the rarity or thinneſs

neſs in every thing, by which it can receive the Humors into it ſelf. 2. Or from the hidden heat or flame, lying in the aſhes of Stones, or Lime burnt, in which, becauſe they are more ſolid, the flame (which inſinuated it ſelf in burning) lyeth hid; and after by the contrary qualities of Water, that is, moiſtneſs, and cold, it is brought forth into act, whileſt the flame lurking extreamly reſiſteth the qualities of Water, but not ſo in oyle.

There is greater ſharpneſs in thoſe things whoſe Matter before burning was thick and ſharp; as Vitriol, rind of an Oake, Wormwood, &c.

From this reaſon we exhibit charcoals to Cattel we intend to fat, eſpecially Oaken coales, that their Pouder may eaſily be drawn by the Veins, and paſs thorough them, by reaſon of their thin and ſubtilneſs, and ſo may dilate the Veins to make them receive a greater quantity of Blood, may provoke the ſtomack by his Acrimony, by his Dryneſs, may draw the Chyle and Blood, and thence from many prevent Apoſthumes in men; eſpecially the coals of the Linden Tree, that the groſneſs of the Blood may be cut, leſt the Spirits ſhould be ſuffocated.

Of Aſhes alſo, ſome are true, as of Stones

and

and plants, from which all the liquor is truly carried away by the fire; some like, or analogical, as of Metals who appear dry to the Senses, but by their power keep in themselves their native liquor, by whose benefit they may be poured forth, or altogether reduced: of which kind is Gold especially.

From hence may be demanded, whether ashes retain or keep any vertue or faculty of the Medicine, since the faculty whether hid or manifest, is not but in the temperament, by smell and savour, but in calcination the temperament, Odour, and Savour, are altogether destroyed (for nothing is left but the earthy Matter) but contrarily in some of them, a strange heat is induced, native coldness of the earth and Acrimony, and in all things which have smell and taste, different smell and taste; so that I can conclude no otherwise, but that there is nothing at all retained to the proper vertue of the Medicine in the Ashes.

The calcination of Iron, and *Cyprian* vitriols (seeing they agree in substance, and only differ in certain accidents) is chiefly made from Sulphur, because it is greedily drawn and imbibed, by these being hot, for the Sulphur, by his hidden Acrimony & sharpness, piercing, all the coagulation, or

Matter,

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Matter,

Matter, which holdeth and keepeth them togother, is dissolved and exhaled away: And whether the *coagulum* of other Metals, may be so dissolved by loosning Waters, that the potential moistnes may be resolved into vapours; I much doubt of.

2. *Liquefaction*, or *melting*, is generally an actuation, or working forth of moistnes lying hid in a dry body, by heat, (a watry body excepted) but that ought so here to be, that the liquid Matter remaining, by peircing may work that in the Body, which by his vertue or faculty it is able to do.

The material principles of which sublunary bodies consist, are two, 1. Earth, and 2. Moistnes, which are the subject of heat, upon which he worketh, for earth is the bound or limit of moistnes.

Of humors or moistnes, some subsist by themselves, all earthy Matter being removed: such as is an airy waterishnes, which is: *Spiritous* or *Oily*. Both of which are inflammable, or apt to be kindled. To these, as to the earthy Matter so many material principles are answerable in an animate body, (by which name that is nourished in these.)

Again the Oily hath three differences, for

it is either from the fat of living Creatures, in Plants, from which that which is drawn forth, yeeldeth his chief Nourishment, or floweth by his own accord from Stones, (as *Petroleum*) but is not fit for the Nourishment of a living Body by reason of the excessive Heat, as also the rest. And for the same cause, that which lyeth hid in Amber, Brimstone, and Wax, (for that which lyeth hid in Honey, is of one and the same kind with oyle of Wax (But Manna & Salt-peter, because they easily take fire, prove and shew a hidden oyle in them; but then by reason of the Scarcity of the oyle, as also for the plenty of the earthy Matter, that is first resolved, & vapoureth away into Smoke, before it is separated from the same.

Besides these, there are others which are not actuated, or brought forth, but by Heat, nor are kindled by themselves (that is, do not nourish a flame) but the Heat being removed, return to their former Drineſs.

And again of these things, there is a threefold sort or kind.

1. One sort of Plants, seeing that the ashes of these melt.
2. Of Mettals. } and these are fluxible, or
3. Of Minerals. } run forth in the fire,

And truly these, cannot be separated at all

from the Earthy matter, without their loſs.

By the ſaid Humours, or Moiſtneſs, we underſtand the Oily, which is melted out, that it may preſerve, & keep his actual moiſture, the which is done by mixing the Oyls, (eſpecially thoſe of the ſame kind) or alſo hot water, (for ſo we Melt or Diſſolve Manna) or Vinegar: as we melt Rozins) for by this means, the Earthy matter, overcome by the Aiery; by the multitude, or by help of a little Heat, continueth Moiſt.

Thoſe things eaſieſt melt, which the Heat can eaſieſt penetrate: Notwithſtanding either 1. The Solidity or Hardneſs which is in Iron or Braſs: Or 2. Coldneſs actual & potential which is in the other Mettals. Or 3. actual Drineſs, or ſcarcity of the Oyl contained, which is in Amber. But Earth, & the ſaid watery & aiery Humor, is not found in all ſublunary Bodies, nor can all ſublunary Bodies be reſolved, (as *Pſeudo-Chimicæ* vainly Imagine) into theſe Principles. But of that Solution and Separation we ſhall preſently handle.

3. *Expreſſion.* By Hand or Preſs (when greater ſtrength muſt be uſed) the Jucineſs is drawn from the Plants and their Parts: Or Simply, the Watery or Oily Juyce, by certain

certain helps: As 1. Almonds unhusked are drawn forth (leaſt the husk or rind ſhould ſuck or imbibe a great part of the Juyce) and being bruiſed that the Oyl without an, hinderance may paſs forth, through the thicker Earthy parts, a little quantity of Roſe-water is poured upon it, as well for ſmels ſake, as that it may come forth the readier; and after this manner an Oyl is drawn forth of the Meal of the Seſame-ſeed.

2. Nutmeg is hung up in a covered Still, that it may touch the hot water, that the hot peircing Vapours afterwards may carry away with them in the expreſſion, the flowing Oyl.

3. Yolks of Eggs, boyled or fried in a Frying-pan unto Hardneſs, more eaſily ſend forth their Oyl, being afterward preſſed.

4. From Corn or Grain put between two hot plates of Iron, an Oyl is drawn forth, which is gathered together by Heat.

4. *Infuſion.* Dry things are Infuſed into Liquor fit for our purpoſes, that by helps of actual or potential Heat, they may impart their Vertue to the Liquor, and ſo may be more uſefully received in at the mouth, or elſe that the hard may be ſoftned, or loo-

sed, or that the Liquor may correct some Quality of the thing infused, or contrary. So we infuse *Rubarb*, or the leaves of *Sena*, into hot water, (lest the thin parts should exhale by Boiling) being well and close covered, and leave them in a warm place,)& so likewise the Leaves of Roses, Rue, *&c.* in Vinegar) that the moisture actually warm, passing through all the Earthy parts, may receive into it self, the vertue of those things which is in the thin parts.

So Purgatives, or changing Medicines, being infused in Wine, or spirit of Wine, we place in a cold place, that the Wine may not Sowr, & that the Moisture potentially Hot, which I have said it will make in the Hot Bath, that the Moisture by the actual & potential Heat, may work so much the stronger; but this latter is Compounded of Infusion, and Concoction.

The things infused are left the longer in the Liquor, if the Matter infused, be the Grosser or Harder, and the Moisture potentially Hot; but less while, if the Liquor be more thin, and penetrateth more, and hath less potential Heat.

For you must take heed, that they stand not so long infused, that they may putrifie or contract Foulness, or Hoarines.

To

To infusion belongeth 1. We pour out a cold Emulsion, (as for example sake) with the seeds of Melons, or Pompeons, husked & bruised, and strain them through a linnen cloth, so long as they will cast forth a Milky juyce. 2. A Lye. 3. When a hot Iron, Flint, or Stone heated, communicateth their Astriction to Oyle or Water quenched.

That Oyle which they call Philosophers Oyle, taketh from the flame a very heating power, as well in this Infusion, as in the following dry Distillation. 4. When Pouders or things calcined, as either Salt, and Ashes poured forth, receiving the taste and smell, and strength of the juyce which they imbibe.

But Spirits suddenly resolved exhale and vapour away, Being infused in Salt, or Ashes flowing. 5. Lotion, as when the Yellow Colour, and troublesome smell of Turpentine is washed away with water, as also when the *Cyanean*, and *Armenian* Stone are washed, Oyls and Fat, that the Vitious malignant Qualities, and Foul smell may be taken away.

Lye, is a Watery or Spiritous humour sifted through Ashes. Therefore it is to be valued as well from the Nature of the Ashes, as the moisture poured out on it, for from

the Aſhes, it hath his ſtrength of Drying, Cleanſing, and cutting by his Sarpneſs, which the actual and potential Heat of the Liquor poured forth increaſeth, and by conſequent it hath no ſtrength of ſoftning or conglutinating together.

If the Moiſture poured on, be potentially Hot, or Cold, of the ſame nature will the Lye be alſo.

But ſeeing the Aſhes doth retain nothing of the Vertue of the Medicine, neither from the Lye will any Vertue be in it, at all. The lightneſs of the Lye, ariſeth from that Moiſture of the Aſhes, which we have ſaid is melted with a vehement fire, and advance the paſſage through the Veſſels, taken by the Mouth, and after the cleanſing of the Foulneſs away, induceth eſpecially a ſmoothneſs to the Skin of man.

In the ſaid faculties, and in the manner of generation, it is like to the wheyie part of Blood, by which name it hath a ſympathy with the Reins and Bladder, and from thence a dieuretich power of cutting the Flegm, and de-obſtructing the Veins. But it hath no ſweating power, unleſs it be got from good Wine, or the Spirits of Wine, nor of a Counter-poiſon by it ſelf, unleſs it be got from Diſtilled Waters, Decoctions,

and

and Infusions of this kind, or that Plants resisting Poyson, be put in place of *Strata*, in the straining through.

But by accident whilest it resisteth Putrefaction, and tough clammy Poisons by Drying, and Cutting, by Urine and sweatings, it carrieth along with it the Poyson, Nature together thrusting forth the Poyson, by which advice, many drink their own Urine in times when the Aire is Infected.

That mixture also is like to Infusion, when the Oyl and watery Humour is mixed with the Earthy matter, for when the Oily Humour repelleth from it the water, contrarily the watery may be easily Dryed up with the Earthy: so that thence it may easier admit the Oyl, it accordeth rather that the Earthy matter be mingled before with the watery Moist, then with the Oily; so in the threefold Medicine, Lythargy, or White-lead, is first mingled with Vinegar, and after with Oyl.

5. *Decoction.* The Humour is either digested by the fire alone, or with the Humour and Earthy matter, until that either for the most part, the watery Parts exhale away, as it is in boyling of Salt water; 1. Of a Nitrous Humour, of Juyces, expressed, *&c.* That no occasion of Putrefacti-

on may be given. 2. The vitious or evil Qualities exhale away. 3. Hard things may be ſoftned. 4. The Medicinable Quality of the things infuſed, may be communicated to the Honour. 5. And that the moiſt parts may be exactly mixed and united with the Earthy.

And theſe alſo are two ends of Inſolation, when we expoſe into the Sun, Oyle, Spirits, or Vinegar, with things Infuſed, for this alſo is a certain Decoction, or Digeſtion, that the earthy Matter, may be gathered together and ſettle, ſo that afterward it may be ſeparated.

That humour is either an Oily, or a Watery juyce drawn forth; Water, Wine, Beer, ſweet Wine, honyed Wine, and Vinegar. Fooliſhly called by ſome a *Menſtruum*, ſince no Phyſical Infuſion or Decoction requireth the ſpace of a month, but may at the utmoſt be finiſhed in three dayes ſpace.

1. Decoction is made in a Veſſel ſhut or cloſed, when we fear the loſs or flying away of the ſubtile and thinner Vapours.

2. Or in an open Veſſel, when we would exhale offenſive Qualities: There is need of being careful about it, and looking often to the Matter, that it may not be Burned, and of double Clarifying it, either in the

the Bath, to keep in the Faculties of the things Infused, and to prevent *Empyreuma*.

1. By reason of the delay, hard things require a long time) which for this cause ought first to be put in, and require more Moistness) in which their great abundance of Moisture is to be resolved for avoiding Putrefaction. 2. Less hard, require a lesser time, when there is no such great abundance of water to be resolved; so we boil Leaves, to the Consumption only of the fourth part of the Water: 3. Flowers and Spices require a short time, to the Boiling of which, two or three Walms will suffice.

Sometimes the Decoction is reiterated, or the Infusion, by a Straning or Expression renewed, that the thicker parts being separated, those which are thinner, may in the other Decoction, be more exactly united together.

There is also a certain natural Coction, as when new Wine boileth up, or as new Beer Brewed, Honey and Water mixed, new Wine. *&c.* and some infusions; when as the Potential Heat actuated, or put a working separateth the grosser parts from the thinner, (some advancing upward, and some setling downward, and resolveth the thinner parts into Vapours or Spirits, which being

being scattered, if there be not space, or Issue enough to go forth, the same break the Vessels a pieces though very strong.

Though according to the opinion of *Actuarius*, Sirrup, or a Julep, be water boyled with Hony or Sugar, or Wine boyled to the third part, yet at this day, all Decoctions are called Sirrups, in which water with Plants is boyled, either with, or without Sugar or Hony; and Juleps when stilled waters, Rob, when the juyces are pressed forth in an equal weight with Sugar, or boyled with a half part of Sugar, Sugar and Hony are added, for Cleansing, Taste, or Lusting sake: For by their Clammines, as by a Coagulation, it conserveth the parts united.

In preparation of Simple Sirrup, for continuance (as for example sake) of flowers of Violets, or Roses; it is best to have the Juyce of Violets pressed out, to be Infused raw in Sugar clarified warm, (not boyling, lest it exhale away some of the smell) and to set it into the Sun, to resolve away the superfluous watry Moistnes; and if insolation suffice not, by inclining the Vessel to seperate that which is watry, and then being boyled again, to pour it on, for so the smell and strength of the Medicine will be

preser-

preſerved, and kept more powerfully; concerning which, our Reformer *Quercetan*, hath nothing he can more boaſt of.

But ſeeing in Roſes, there is an Aiery ſpirituous, and Oily matter, which either doth not enter the Juyce, or is more drawn out by a fervent Decoction; it is beſt, that Roſes be firſt infuſed in a boyling, or fervent Decoction, and ſome hours after preſſed forth; and to this Juyce other Roſes be put, and being about nine times iterated, by Infuſion in Balneo (to prevent Empyreuma, and Evaporations) then that juyce at length preſt or ſtrained out, ſhould be boyled with about a third part of Sugar, to a fit conſiſtence in *Balneo Mariæ*: For ſince the purgative ſtrength of Roſes is rather placed in the Earthy part, *Quercetan* erreth, whileſt he would have the Digeſtion of the juyce at length drawn, or preſt forth, to be repeated in *Balneo*, and that which is clear to be ſeperated, adding thereto the Earthy parts.

But plenty of the ſaid flowers being wanting, Infuſion in boyling water, the Veſſel being well cloſed up, hath the next place; nor then is there any need of *Balneum*; it ſufficeth to be placed in a warm place for certain hours; or if you had rather uſe the Diſtilled water of Roſes, it ought

ought not to boil forth, but to be placed a while in *Balneo* which the Roſes.

There is alſo a Salt made or prepared by Decoction out of Salt waters: It is the Propriety of Salt, to bind and be Sharp, Brackiſh and of a watry off-ſpring, by which name, it receiving into it ſelf a moiſt Aire, forthwith melteth, as alſo others which from their firſt Origine, are rather Watry, then Earthy.

From whence it followeth, that no true Salt can be got out of Plants, yea, even from them which abound with Saltneſs: Such as are, Kaly, or Salt-wort, and Sea-grape, or knotted Kaly: For which cauſe we refuſe, and altogether reject thoſe white Powders, which are made of ſodden Lyes; whileſt Lye filtered is Stilled, till there remaineth in the bottome a thickneſs like Honey, which is dryed at the Sun, or by the Furnace, and at length, for Whiteneſs ſake, is burnt by a Moderate fire in a Gold-ſmiths Pot, when they want a native Ginuine Saltneſs; and if there be any, it is much Inferiour to that in natural Salt; when in like manner, the Lye retaineth nothing of the nature of a Medicine (beſides ſharpneſs) much leſs the foreſaid Powders, unleſs Paradventure, thoſe which are void of all Sharpneſs, may be uſeful gently to dry, but will not anſwer

swer the labour of making them, and cost in their Operation.

Neither can true Salt be gotten, or made out of Urine. For if it be Boiled or Stilled, till the watery Moisture is resolved into Vapours, and the Dregs be calcined, there ariseth a Powder with an odious Taste; and if you pour water upon the thing calcined, and after draw it by Distillation, you may truly wash away the stink; but you will have remaining, rather the Taste of Salt-peter, then of Salt?

But what madness is it to reckon Vitriol, Allum, and Sugar, in the number of Salts? where is their Saltness? shall then likeness make all things the same.

In like manner also, by Decoction almost are prepared, you Lohochs, your Electuaries, Candid things, Morsels, Pills, Trochisces, Glisters, Suppositories, Ointments, Pultess, and Cerots.

In making your Medicines, which are called Lumbitives, and Arteriacks, from the rough Attery, a Wind-pipe the mollifie. The *Arabians* call those Medicines Lohochs, which have Power to mollifie the Breast, stay Catarrhes or Rheumes, and cut Flegme, and they make a Decoction first to Clamminess, then add Sugar Pennels, and boil

boyl it to the thickneſs of Hony, and after expreſſion when it begins to cool, mingle the reſt in a Morter, without Decoction; as Vine kernels, ſweet Almonds husked, juyce of Liquoriee, *Tragacanth*, & *Gum Arabick*, *Ireos* Roots, and white Starch, becauſe their ſtrength will rather be weakned by Decoction, then drawn forth.

But ſeeing the cutting faculty is extream contrary to touch and thickning, and that the one weakneth the ſtrength of the other, ſometimes they are wont with great overſight to be mixed together.

In like manner in Electuaries, they are firſt boyled in the ſame order, of which I have formerly adviſed you, thoſe things whoſe faculty may fitly be drawn forth by Decoction, to the Conſumption of their parts; there is after added a third part of Sugar, and then it is boyled up again to a conſiſtence, as well for Taſte, as Laſting, and laſt of all ſuch things are added, which are not fit to be boyled, ſuch as are Conſerves, Flowers of *Caſſia*, Pulp of Prunes, *Tamarindes*, *&c.* or *Sena* leaves, *Rubarb*, *Agarick*, *Coloquintida*, are Infuſed into the boyling Decoction, and about twelve hours after, they may be ſtreined with expreſſion, and the expreſſion forthwith boyled up to

a

a consistance with Sugar, the rest as I have said being added.

Those things which we will Preserve, we first cleanse, and throw away that in the Roots which is Woody, and by Decoction we soften hard things, and take away the bitterness from bitter things, (though this rather serve for Gluttony then Physical intentions) and being lightly dryed, we put Sugar to them warm, boyled up to a fit thickness (for too much heat shrinketh the Fruit) till they are well covered, and then if any of the watery Moistness appear, that being separate, and reboyled is poured on: but some Fruits (as for example sake) Cherries are presently dipped into the said Sugar.

The soundness of the Flowers is Conserved (from whence they are called Consetves) if unto them being small bruised, a double part of Sugar carefully poudred be mingled, and exposed to the Sun to dry up the watry Moisture, & therefore they are to be gathered in fair and dry weather, and the whites are to be clipt off from the Roses for their bitterness.

Sometimes to gratifie the Sick, we mingle powders Simple or Compound, or Distilled Oyls with Sugar, and also Medicines cut into

into small parts: If the Pouder be Pleasant or Purging (that the Purgative power may not be weakned by too great a Proportion of Sugar) we mingle an ounce of it Dissolved and perfectly boiled with a dram of the said Sugar in Odoriferous water, or such as shall serve for our purpose, but with Pouders less grateful one dram, with two ounces of Sugar, but of oyl one Scruple, with half a pound of Sugar, and the Sugar being boiled enough, remove it from the fire, beat it a good while with a Pestle, until the Pouders or Oyl are well mixed together, and then pour it forth upon a Table, and Frame out round Pellets, or four square Tablets or Lozenges, or Long (which they call Bits); Sometimes to the Sugar poudered we mingle only some few drops of Distilled Oyl without any Decoction: but this we have referred unto our Infusions.

Pills called *Cataphotia* (because they are swallowed) are made up either of Extracts, or Pouders, moistned with some sofa Humour of such a bigness, as any one may swallow them: and that they may not offend in Smell or Taste, let them be Guilded. The close is esteemed by the working of the Ingredient, *v. g.*

The Scope of the Golden Pills of *Nicolam*,

lem, is to purge all Humours, which Scammony performeth, but more ſlow flegm: therefore *Coloquintida* is added to it. But Aloes, though it looſen the Belly, yet it is chiefly here inſerted, becauſe according to the Opinion of *Meſue*, it ſtrengtheneth all the Bowels, (but eſpecially the Stomach and Liver, by Opening this, and Cleanſing that) and by his thickneſs correcteth the Acrimony of the reſt: Maſtich, and Tragacanth by their clammineſs, correcteth the ſharpneſs; the ſeed of Fennel and Anniſe, Saffron, and Roſes, Correct the power which is Offenſive to Stomach, Brain, and Heart, and alſo prepare and fit the Flegm, by cutting and cleanſing it: Aloes, Parſeley ſeed, and the other ſeed. And becauſe gentle Purgatives are mixed with ſtrong and vehement Purgers; there is almoſt the ſame Quantity of Correctors, that is, ten drams, as of Purgatives, which are eleven drams: And whereas a Doſe of Pills ought not to exceed four Scruples: This Maſſe ought to be divided into about 20 drams; by which name, there ſhall be in every Doſe of Aloes, Scammony, Coloquintida, whoſe higheſt Doſe is 2 ʒ and 12 grains, of each 15 grains, and 3 grains. And ſo every Pill ſhall have of vehement Purgers 18

grains, which Dose is therefore the greater, because the Correctors do not a little dull and weaken the strength of the Purgers.

By the like Reason round orbicular Pellets or Trochises are framed, the strength of Agarick being an enemy to the Stomach, is corrected by Wine in which Ginger is macerated; and with Tragacanth (which is slow and dull) an union is made of the broken and scattered parts; and the sharpness and malignity of Coloquintida in the Trochises of *Athandal*. For ten ounces (some read evilly so many Dragms; for otherwise the Purgatives should be much overcome by the Correctives, which were faulty) are rubbed with oyl of sweet Almonds, for one whole Dupe; and then they are reduced into a Masse, or Body, by the infusion of four ounces of Rosewater, of Bdellum, Gum Arabick, and Tragacanth, of each nine Drams. The Masse being again dried in the shadow, being very small beaten, is at length (with the said infusion) brought into a paste.

Clysters are profitable in vomitting, when the Sick hold not those things which they receive at the Mouth, or when they can receive nothing by the Mouth: They are good in a hard Belly to loosen it, and the

dregs

dregs or Excrements; and in a fluid or moist, to bind the same, and to thicken the Excrements, or mollifie the sharp.

For Ulcers in the Guts, to cleanse and glew them together, and for Diseases of the Belly, of the Reins, and Bladder; for they can work strongly upon these parts, by discussing the Vapours and Windiness.

Loosning may be caused in one of full Age, by a pint of flesh pottage, of Decoction, of Milk, Barly, or Emollient Herbs, of Water, or Whey strained (that the passages may be cleansed) and of Sugar or Hony boyled (lest Windiness may be moved) half an Ounce strained for cleanness; sometimes instead of Hony, we take purgative Electuaries in the same or lesse quantity, according to their faculty, and the Patients strength, and by reason of the Disease, of oyl, or fat (by reason of the driness of the intestines and excrements) three ounces or five; then we add, when the sharpness of the salt is not sufficient to provoke, and advance the work, or the Sense is duller in the night-gut, about a dram of Salt, sometimes we add a yolk or two, to wash and cleanse the guts, that they may not be hurt by the sharpness of the Humours, or to dull the stirring or provoking Faculty.

Sometimes (if there be no Obstruction present, for otherwise Heat by drying causeth and encreaseth Obstruction) in a cold Distemper, a Glister is made of Muscadine, or Spanish Wine, with an ounce of seeds discussing Wind, boyled and strained hot, and mingled with half an ounce of Treacle: so you may gather by these the use of the rest. When we would have Glisters kept a good while, we exhibite them in a lesser Quantity, Decocted, and avoid all sharp things.

When either Age, or Custom will not endure Glisters; as

1. They that are troubled with Piles or Ulcers of the Fundament, are offended with Glisters: Or if Glisters and Purges do not Work, we will draw them from the Head, or the Midriff, as in old Diseases; or of the Stomach, then we put up Suppositories into the Fundament of young Women to looſen them, of Butter, or Lard.

2. And unto people of full age, provoking and cleansing, of the Root of Beet scraped annointed with a little Butter, sprinkled with a little Salt and Hony boyled up into hardness, when the Fundament doth not perfectly feel, or is moved, wee'l put on it a little purging Pouder, or otherwise frame some of fit and convenient matter. Whe

When Oyls will not cleave or faſten on the parts, Art hath invented Ointments, which may ſtick and hold cloſer to, and work ſtronger.

1. Therefore either Oyl Diſtilled is mixed with Wax, Manna, or the like Aierial matter, (for cauſe of a more exacter mingling by reaſon of their Simpathy) and a Terreſtrial matter, (by reaſon of his making up in form of a Liniment.) 1. And it is called a Balſom, becauſe it cometh very near to the nature of true Balſom. 2. Or the juycy parts of the Plants are boyled with Oyl, or Butter (rather then their juyce preſſed out) becauſe if they have Oyly or Spirituous parts in them, by this means, that, and the ſtrength of it is Extracted and drawn forth (which is not in the watry juyce.) 3. The dry Plants are ſod with equal portions, of Wine, Butter, Oyl; that the aquoſity or watrineſſe of the Wine, may as well reſtrain the collection of foul corrupt Matter; and that the Fire by inſinuating his Heat, may not change the temper of the Ointment; and and that the ſpirituous parts, peircing by their thinneſs, may draw out the ſpirituous and oyly part which is in them, and may communicate it to the Oyl.

Either decoction is drawn ? Watry juyce,
to the Consumption of the ʃ Wine.
When the watrineſs is not mixed with the Oyl, and gives occaſion of putrefaction. By **Olives**, of which oyl *Omphacine* is made, we underſtand the wild boyled in Oyl; according as *Theophraſtus*, and *Athenæus* conceive in their Writings, becauſe Aſtringent Oyl cannot be preſſed forth, neither from ripe, nor putrified Olives, nor from unripe, which rather yield a Watery Juyce Aſtringent.

Emollient pultiſſes are made with emollient Decoctions, Bran, and Powders, and Oyl, Butter, Fat, Honey, and the Decoction ſtrained forth, is mixed with powders; that which is Fat is poured upon the hot (for that muſt not be boyled) till all things mingled come into the form of a pultiſs. But thoſe which draw from the inward parts to the *Superficies*, (as Heat, Nouriſhment, *&c.*) are made of ſharp Muſtard-ſeed, and dry Figs (becauſe they draw and reſtrain that the Muſtard-ſeed burn not too much, which the day before are macerated in warm Water, and is bruiſed and brought into a Maſſe.

When we would draw leſs violently, we take equal parts of both, or two of Figs,

Figs, and Muſtard, one of Muſtard, and of Figs.

Cerots, are of a thicker and drier conſiſtence, beſides pouders, oyls, and fats, they take up Wax and Rozin (which makes them ſtick and cleave faſter) eſpecially Turpentine, or hard Rozin (for the mildneſs and ſweetneſs) and they are boyled ſo long till they ſoyl not the hands: The matter of them is various, according to the end which they are to be uſed for, which are either to repel, draw, mitigate pain, ſtrengthen, ſoften, diſcuſs, dry up, digeſt crudities, open, purge, conglutinate, and harden a ſear.

6. *Deſtillation* is made when the actual or potential Humour, is reſolved by heat into vapours, and ſeparated from his earthy dregs, which preſently by the compaſſing Cold growing together, drop or diſtil into a ſimple Water, Spirits, or a ſpiritous Water, or Oyl.

1. *Deſtillation* otherwiſe is made in *Balneo*, (to prevent [a collection of corrupt matter in the whole Bulk] and Aduſtion) only upward, becauſe the watry vapours eſpecially are lifted up. *Empyreuma.*

2. Or without *Balneum*, which we may call a dry Diſtillation: For by this, the Water and Oyl deſcend downward, or the

vapours are lifted upward, which are *Watry*, *Spiritous*, *Oyly*.

For whileſt, in the thing Diſtilled, the Water and Spirit are both together, then they both aſcend together by reaſon of their thinneſs, and therefore the Diſtillation is to be reiterated, that afterward the Spirits by their thinneſs, may go before the Watry vapours; for the Water, Spirit, and Oyl are all together: Thus the Watry and Spiritous vapours are lifted up together, and they by reaſon of their natural Affinity, carry the Oyly with them, by reaſon whereof the Oyl being ſeparated, the Diſtillation is to be reiterated, for ſevering the Spirits; but if with the earthy matter, the Oyl only is joyned, by a dry Diſtillation it ought to be encreaſed with a greater heat, that it may be ſeparated from the earthy matter (which it hardly forſakes) either by deſcending, or ſmally aſcending; to which purpoſe, peculiar Organs, or Inſtruments, are required.

The Spirits, by reaſon of their lightneſs, will by no means deſcend: In *Balneo*, either not at all, or very ſparingly they are lifted up; becauſe if the Fire work not on them (which the Water of the *Balneum* hindereth) they cannot be ſeparated from the Water.

The

The Spirits, by reaſon of their thinneſs, and potential heat, that they may the ſooner encreaſe, and grow together, require Refrigeratories filled with cold water, which are either faſtned to the top of the Elembick, or a right, or winding crooked Pipe is faſtned with the beak of it (therefore called *Serpens*,) becauſe thereby the Spirits ſtaying the longer in the Cockle, do the more put off their collection of corrupt matter, paſſing through the cold water of a large veſſel.

In Diſtillation which is made downward, either a Paper is put upon the Juycy Plants, having a linnen Cloth ſpread over the Platter, or Diſh, with good ſtore of Sand, to which hot Coals are put; for aſſoon as the Heat hath drawn forth the vapours, when they are reſtrained from being lifted up, being grown together, they fall down into the Platter, ſet under, in drops.

Or elſe in Roziny Woods, being included in a Potters veſſel, Coals being placed about them, which draw forth by the powerful Heat, that which is fatty; from whence the Oyl floweth, by a Cover with holes (without the earthy matter) into a Veſſel ſet under, (ſet cloſe to the Earth for Refrigeration ſake) or Amber melteth after this

this manner in such a Vessel, but that the thinner part of the earthy matter may not passe through the holes, we use dry sand, or pouder of flints, or tiles, or ashes of bones burnt; and to wash away the stench and blackness, a Vessel below is filled up to the half with Water, into which the falling drops slide, or fall into another Vessel, set under of purpose.

In Distillation, which is speedily made upward, the Spirits are separated from the Water by an Instrument of a large Neck, which they call *Phyola*, a plain Pot with a wide Mouth, whilest as I said, the former are lifted up; as soon therefore as the Watery vapours succeed, the receiving Vessel is to be changed; the other shut up the Watery vapours with a Spunge, or parchment Paper set upon the Cucurbite.

In this kind of Distillation, sharp, tart vapours, have this peculiar, that after (for example sake) the Watery vapours arising out of Vinegar, Salt, Vitriol, Allum, Salt-[illegible]ter, are lifted up; they are separated first without Acrimony, (therefore we suffer the said vapours of Vitriol to exale before Distillation in an open Vessel) and that which is left of the watery Humour, the stronger heat doth by boyling more exactly

mingle

mingle with the subtiler earthy parts, till at the length it separateth and driveth forth that violently from the thicker matter.

That is called water of Salt, &c. unskilfully Oyl, seeing it hath nothing common with Oyl, besides the thicker consistence apparent; but Spirit (though improperly, since every Spirit is inflamable, and potentially, or vertually hot by it self) it may be called for his potential heat, but accidental, (for this from fire, which hath insinuated it self, and sharpness partly from fire from the said mixture) in which it differs from the nature of Water, and agrees with the Spirits: If therefore those Spirits separated again, be poured upon the earthy matter, forthwith the vapours go forth much sharper and hotter, and by reason of their Aiery and Fiery Nature, suffer themselves to be shut up very heavily, by which cause the recipent Vessel ought to be very ample and large, lest it break, before the concretion be made of the vapours.

To Distillation, which is made upward, a little Wine, or Water, is sprinkled on the fresh Plants, which are not Juycy enough, that you may draw away the Water from the dry; If you desire only Water, somthing spirituous, they are poured into

into Water, Wine, or Water if it be Spirituous it ſelf. And they are left in *Balneo* for 24 hours, that the vertue may be the more communicated and imparted to the Humour.

But if you would add freſh Flowers, gathered at divers times, the Infuſion is to be made in the Spirit of Wine, in a cold place, leſt by placing they may be corrupted.

For Example, Cinnamon Water; this being broken ſmall, is hanged in a peece, in a blind Limbeck, filled with Water, ſo as the Water may not touch the Bag; then let the water boyl till all the parts of the Cinnamon be moiſt and warm fitly; then take out the Cinnamon, and beat it into paſte, and then again let it be infuſed and Diſtilled in the former water.

If thou deſireſt Spirit, and Oyl, out of Plants, you ought to boyl the Matter before alwayes, either in his proper humour or moiſtneſs: So red Roſes exquiſitely bruiſed, and ſtopt up in a Glaſſy Veſſel, and plac'd in a Celler, till the potential Heat actuates, and the moiſture boyls up, compelled by the *Antiperiſtaſmi*, or repulſion on every part of the cold.

Cherries with their Kernels (for the Spirits lye incloſed in them) are placed in a warm

warm place, the Lees of Wine or Oyl being poured upon them, that their Heat lying hid, may stir up the Spirit till it boyl up. Or with water poured on, and the said Lees, as is done before the Distillation of the Spirits, and the Oyl.

Juniper berries, Wheat, &c. are first to be bruised, that the water may peirce all the patts, and the Spirit with the Oyl may unite unto it. If you separate the Spirits from the Water, by Distillation sometimes repeated, at the length you shall have the most pure Spirits, together with the Oyl, from all Plants potentially hot.

None but a Fool, will call those Infusions, or Macerations, putrefaction; because this is an innated destruction of Heat, that the actuation thereof, and this is a progress not unto perfection, (as that) but a passage to the corruption of the thing.

If there be a little part of Oyl in it, the dry Matter ought to be infused into the Spirits, that they may peirce the more, and draw the Oyl with it.

The purging force, taste, sweet, bitter, salt, and the colour, seeing it is placed in the thicker earthy matter, they are not communicated to the humour in distilling (nor the smell of the purple Violet, &c. by reason

of

of the smalness of the odoriferous exhalation) as it chiefly appears in the Example of Sirrup of Roses purging, in whose Distillation the Water draws away nothing, but the Astringent Faculty; (under which it stayeth the Looseness of the Belly without Inflammation) the purging part being left in the dregs; And this very Observation ministred the first occasion to Extraction.

If Water Distilled (as for Example) of Roses, be often poured on fresh Roses; the Distillation being iterated, by so much the more his strength is encreased; but the same poured upon the Lees, forth-with to Still, as the Water of Capons, were to spend time foolishly, seeing that the Qualities of flesh are communicated not by Distillation, but by Decoction.

When the most subtile Earthy Matter is mixed with Oyl only, as in Wax, Sulphur, Rozins, Amber, then there is required to the distillation, some loosing spirituous matter, which may carry the Oyl along with it; an Humour, and earthy Matter, which may keep back *Empyreuma* and Adustion, and the ascention of the subtile earthy matter.

Such loosing things which effectuate all these together are common, Salt, *Sal gemmæ*, Salt-peter, Salt Ammoniack, Plum Allum,

lum, pure ſand, aſhes of bones burnt, pouder of flints, and tiles of bricks, theſe eſpecially hinder the aſcent of the earthy matter.

Diſtilled Vinegar, and Spirit of Wine, have truly a looſing power, and carry the Oyl with them: but to the Diſtillation of Amber are impertinent, becauſe they aſcend before the Amber melteth, and ſo preſerveit not from the heat or violence of the Fire.

If the firſt Diſtillation of Amber be made rightly, there doth not need another in *Balneo*, which they call Rectification, for ſo much as the Water waſheth or taketh away of his colour, ſo much it taketh away of his ſtrength.

Pitch and Colophony, by reaſon of their great viſcoſity and groſſneſs, before are ſod with rich Wine, to the Conſumption of the Wine; that Allum afterward added may ſo much the eaſier paſſe or penetrate, this liquid matter, and the Oyl ſeparated from the earthy matter, may aſcend more ſpeedily.

There is another kind of diſtilling of Oyl, when hot glowing Bricks or Tiles, broken in peeces, are quenched in the Oyl (from whence it is called Oyl of Bricks) becauſe it taketh from the Fire his great heat, and from

from the Bricks his Astriction; and being after reduced into pouder, are forced out by a strong fire; that by this means they may also receive more Heat and Astriction, and by the same manner Oyl of quick Lime is prepared: And seeing it is the nature of Oyl, and of oyly things, that being put to the fire, they are presently inflamed; these, if they be actually dry, they swim above the water, contrary to all reason.

1. Amongst Oyls are reckoned, Spirit (as I said) of Salt, the Water being concrete from the vapours of Brimstone, set on fire under a Bell.

1. Extract of Cinnamon, which setleth at the bottom in Water distilled.

2. The moistness which is drawn from Worms, being stop'd up with paste in a Glass, with heat of an Oven.

3. Or which from Cowslip flowers, and by insolation is drawn forth.

4. And when in like manner the White of an Egge, hung in a pot with Camphire, flower of Brimstone, or Myrrhe, or Tartar burnt, mixt with a sharp moisture, the dryness vanishing or vapouring away, which they received, or took from the heat, they return into their former watery nature.

Secondly, Oyl is fought from Stones, Jewels,

Jewels, Mercury, Antimony, Mettals, and out of all those things, which have now before felt the ſtrong reſolving force of Fire, from Cryſtal, Tartar, Coral, Pearls, Vinegar, which hath an extream contrary Nature.

Yea, though Salt-peter and Manna alſo are preſently inflamed, yet the ſcarcity of Oyl is much overcome by the Earthy and cold Watery Matter, ſo that rather that which is Oyly in it may be conſumed by the fire, then ſeparated by Diſtillation from the ſaid matter.

To draw Oyl from Blood by Diſtillation, is to mock God, by whoſe Ordination, Nature, in the third Concoction, hath wrought out Oyl from Blood more perfectly; that is to ſay, Fat, Tallow, Butter, which if after the common Liquefaction, or Coction of Fleſh, and bruiſed Bones from Water, thou requireſt more pure, the temperament being unhurt, thou ſhalt ſome days of Harveſt ſet in the Sun, that thou mayeſt ſeparate the pureſt from the dregs ſetled downward.

But behold, how in a matter ſo hard and difficult they trifle here, which exhibite a Mutiny of which appeareth not, whether it be the dryed Fleſh of a Man, or a

Beaſt, and whether it came to a true Balſome; or whether it died not by poyſon; or whether or no they were not the late Carkaſſes of many men, rather annointed over with Myrrhe, Aloes, *&c.* then with true Bolſom, and though true Balſom was uſed to the Bodies of great men, whether in ſo long a time, the force and virtue be not gone forth and expired; and by reaſon of the Corruption which was joyned with it, whether the Indian or Succedanean Balſom, made from Oyl of Cinnamon, Cloves, and the like things, were not much more excellent?

Now when your Oyls are Diſtilled, and your Spirits; whether thoſe ſo mixt, in *Hermes* Veſſel, by boyling them longer, it behoveth to mingle them more exactly, that from thence they may draw an *Elixir*: (which theſe Triflers call *Circulati*) one of the two *Homogeneal* Principles; that is to ſay, of the Air.

One truly encreaſeth the Heat and Smell of the other, and the ſame faculty or ſtrength which is in the Smell: but here obſerve the madneſs of *Quercetan*, above or beyond all his other doatings, he mingleth (*pag.* 60. *Lips. edit.*) 59 Medicines, which every one 1. Either ſtrengtheneth the principal parts: 2. Re-

2. Refresheth the Spirits: 3. Breaketh the strength of Poysons: 4. Resisteth putrefaction: 5. Cutteth grosse thick Humours: And he calleth it a *Specifique* Medicine to Cure inveterate Diseases, Giddiness, Fallingsickness, Palsie, Madness, Melancholy; but how that can be called a Special, or *Specifique* Medicine, which is Compoled of so many different *species* or sorts, which is directed for Diseases, which are most different in Causes and in Kinds.

Seeing this Medicine consisteth for the greatest part of hot things, and Heat may be encreased in distillation, with so frequent, and so much fire, it ought to be most hot; how then can it be profitable to some hot Causes of these Diseases?

How can the strength which is placed in the earthy Matter, and in the Temperaments of the said Medicines, these being destroyed remain, all the rest being removed and taken away.

Besides, his manner of Preparation is full of vanities and deceits: why are the first Spirits distinctly taken, when afterward they are to be mixed? What need is there to pour forth the Spirits upon the lees or dregs prest out, or calcined; the spirits being lifted up, if the Oyl be not carried together with them.

How only doth that, and that which is pure, aſcend afterward? What have Honey and Sugar here to do?

To a dry Diſtillation, Sublimation alſo belongeth, for it is done after the ſame manner by Sand, when the moſt thin earthy matter of Sulphur, Salt, Antimony, green ruſt of Braſs, and Stibium, is elevated by a ſtrong fire, till it ſtick to the ſides of the Still, like a moſt thin pouder. I Diſtil, I ſay, of Brimſtone (leſt all the earthy matter may not be lifted up) and of Vitriol Calcined, and Salt poured forth (that all the Watery humour may be taken away) of each equal parts, and I encreaſe the fire more and more, whilſt almoſt all the Sulphur aſcendeth, when it cooleth again, I add again to the Sulphur ſublimed, taken away of the ſaid Vitriol and Salt, of each equal parts, and in the like manner or reaſon Diſtil it.

Almoſt after the ſame manner, are flowers of Stibium made (but that to the correcting of his viruleney, and leſt he ſhould inflame in Calcination) Salt-peter, and Tartar is added: theſe being together ſet on fire, are calcined in an earthen Veſſel, that the poyſon may exhale away: what is calcined we waſh with water (to diminiſh and leſſen the virulency) let what is waſhed be melted, and the

melted

melted, powdered and elevated in a ſmal ſublimatory, for it aſcends ſlow and heavily.

By the like reaſon from Quick-ſilver, to which (re-purged by Oxalmen) *Aqua fortis* made of Vitriol, and Salt-peter is added: afterward *Aqua fortis* again by Diſtilling is drawn away, & that is thrice poured on with *aqua fortis*; then to the Mercury beaten ſpirit of vitriol is poured, that ſo for the ſpace of 24 hours, the Spirits may exhale at a ſtrong fire. Laſtly, I digeſt that Pouder, either in Spirit of Wine upon Sand, in a blind Limbech, and to theſe poured out put on others, and do ſo thrice, that I may have the precipitate; or elſe I encreaſe the fire in a ſmall ſublimatory underneath, till the glaſs is fired or heated with a purple brightneſs, & a citrine or red flowers aſcend (and ſo I have the ſublimate) upon which I pour the Spirit of Wine, and after take them away by diſtillation; the diſtillation being thrice repeated.

Here, I pray, obſerve Reader.

1. That an actual Humidity is taken from Mercury, by Exhalation, whoſe cauſe is Fire, which actuateth the Exhalation, and *Aqua fortis* (which by the Simpathy it hath with Mercury) by reaſon of the original Humidity, receiving the Fire into it ſelf, otherwiſe avoyding this Enemy of Mer-

cury, detaineth the Mercury in the Fire: and by this means taketh away his actual Coldness and Moistness, by exhalation of his actual Humour; so that the most remaining parts which are in him, are more exactly mixed with his earthly matter; by which mixture and insinuation of fire into Mercury, it taketh his strong sharpness, and Caustick power.

2. That Mercury by interveniency of *Aquæ fortis*, receives the fire into it self, is manifest from his Colour; first White, and then Yellow, with Redness.

3. But whether from Mercury and Antimony his venenosity, from Sulphur his sharpness; by this, or the like manner, may be diminished or taken away, Experience will teach thee the contrary; therefore take none of them into your Body, whatsoever Preparation be made of them; and believe not *Quercetan*, whose primary Chymick Medicines, are Mercury, Antimony, and Mineral Spirits.

4. That the drying Cause ceasing, Mercury returneth to his former Humidity, is the chiefest Argument: that that should be numbred amongst the Mettals; but in all his nature he is contrary to mettals, although it doth very much counterfeit a Simpathy:

Since

Since from Heat, and *Aqua fortis*, it may be reduced into pouder, but reduced into liquor from these: Mettals offer violence unto metal, when it is mixed with those melted: For it maketh those soft, which naturally ought to be hard.

7. *Extraction*, properly so called, is a separation of a more subtile Earthy and Oyly matter (if there be any in it) with his Faculty or Strength by Infusion, Expression, and Distillation, as well as from his thicker Earthy Matter, as well as from his moist Watery, the Spirits for the most part exhaling together. For by Infusion and Expression, the most pure Earthy and Oyly matter, is communicated to the liquor, and the thicker separated.

By Distillation the Watry Humour is separated to the consistence of Hony, or new-Wine sodden to the Consumption of the third part, and the remaining matter is exactly mingled in boyling: although those extracts which want Oyl, nor were infused in spirit of Wine, are afterward dryed altogether in the heat, for preventing putrefaction; from whence the strength of the Medicine is greater in a small portion, then in a great, whilest as yet the thicker matter, and the liquor are joyned together.

Quercetan biddeth, that the Matter yet warm, if it be Oyly (as it is in *Guiacum*-Wood, and *Sassafras*, and Juniper-Bark) be poured forth into a Glassie Dish or Platter, full of Water for Coagulation sake: but that is all one, whether it be done or intermitted, for it is nothing available for Physick intentions.

To *Extraction* chiefly are requisite and fit, Simple and Compound Mediciens, bruised in pieces (that the liquor may more easily penetrate) which have their strength especially placed in the earthy Matter, such as are those chiefly, which are of a strong smell and taste, and most part purging.

From Liquors: 1. Water, Water Distilled of the same kind, or which are serviceable for the Physical intention. 2. Wine, and Spirit of Wine. These truly more penetrating the Matter, and by mingling themselves with the most subtile parts, sooner draw forth their strength and longer bear the stay or Continuance of the Infusion without putrefaction; but work it so that the Extract may better agree with hot Temperament or Diseases, because the Spirits are rather carried upward, then downward.

It is fit and convenient, that Infusion and Mace-

Maceration ſhould be made in *Balneo*, in a Veſſel moſt carefully ſtop'd (that nothing may breath out) that by help of the actual heat, the humour may penetrate the more, and imbibe the Faculty.

The time of Maceration or Soaking, is to be judged from the Conſideration of the things Infuſed (for hard and Rozinous things, ſuch as *Guiacum*, are macerated to ſlit them) till the Liquor poured on is mingled ſufficiently with the Oyly matter, or is ſufficiently tincted and affected with the Colour, or Savour of the Medicine; for then, either other Liquor is poured on the ſame Matter, and that ſo often reiterated, till ſuch time as it is no more affected with tincture or ſavour, and then at length all the Liquors affected, are put together and Diſtilled, the Extract being left in the bottom of the Veſſel, or Bladder. After this manner Rubarb, Rhapeticum, Aloes, Gentian, Cinnamon, Nutmeg, Myrrhe, or elſe the ſaid Liquor affected, is poured on the Plant of the ſame kind, and it is twice or thrice reiterated: So is Cinnamon, Wormwood, leſſer Century, Angelico-root, Zedoary, Galingal, the true Acorns, and Elecompane-root, which neither give Tincture, nor are indued with manifeſt ſmell

or

or ſavour; they are macerated, or ſoaked for one day or two, and then the liquor preſſed forth is poured upon a Plant of the ſame kind, and this is done twice or thrice: In like manner Diſtillation is made in Mechoaſhau, Briony, Piony, Maſterwort-root, *&c.* In the Extraction of freſh Flowers, of Peaches, Plums, Roſes, Flowers, Herbs, and Roots of Celandine, *&c.* There is no need of Effuſion, or putting on of any other moiſture, but the reiterated, preſſing forth of the Juyce often, ought to go before the Diſtillation, and the Infuſion into the moiſture preſſed forth of the freſh Flowers, and Herbs: But to bruiſe Celandine, and Diſtill it, and to put the Diſtilled Water upon the dry Lees, *&c.* is trifling to no purpoſe, in ſo great plenty of Celandine, Experience it ſelf in the ſtrength of either Extraction, will be teſtimony ſufficient.

But ſeeing the Extract of the Roots of Briony, Ireos, and Cuccopintle, may be made after three manners: that is to ſay, That either dryed, they may be infuſed in Spirit of Wine, the juyce preſſed forth out of the freſh Roots diſtilled: Left in a Cellar for a few days, and then the white troubled Water poured forth, the white

Lees

Lees may be Dryed in the ſhadow.

The Queſtion is, Which way may beſt draw forth the Srengths or Virtues of them; for perſons troubled with the Mother, Hydropicks, or thoſe which have an ill habit of Body. *Quercetan* preferreth the third way, I the firſt: Let Reaſon and Experience conclude the Controverſies, and determine it.

For Firſt, Heat is required in all the three Effects, or Diſpoſitions, which here the Spirits of Wine adminiſter to them.

Secondly, Grude Juyce is leſs apt, becauſe it is it ſelf a Phlegmatick Matter, and cannot chooſe but be corrupted by the moiſt Air of the Cellar, and hath nothing which may preſerve it from Corruption.

Thirdly, The Faculties of theſe conſiſt not in the Thin Matter which goeth forth with the Water diſtilled; but rather in the Thick earthy Matter, as their Pouders ſhew plainly.

Quercetan, in Glutinous and Clammy Roots, addeth a half part of White Bread in their Infuſion, (that the Nouriſhment mixed with the Medicine, may as well by his clamminеſs encreaſe his glutinous ſtrength, as derive, or convey, the Medicine the ſooner to the Liver,) and being all moiſtned with

with Wine, placeth them in *Balneo*, till they become red, and moreover digeſteth the Juyce waxing red (that it may become the redder) being preſſed forth; for truly the ſimple man thinketh the red Juyce will be ſooner turned into Bloud, and ſo alſo the red Wine (and by the long ſnout of *Meleagers* Bear) before Diſtillation: But I ſay, we may more commodiouſly draw forth the Nature from Bread, exhibited by it ſelf: But if there be need of Extraction of the Glutinous or Clammy part from Corn, and drawing the Medicine through the veins; all true Phyloſophers (not ſuch Sophiſters) will with me preferre Decoction far before it, with which the thick Glutinous *Danſick*-Beer is made, if with the ſaid Extract (made without Bread) that may be mingled.

He alſo infuſeth black *Hellebor* in Vinegar (being moſt adverſe to the Spleen) to draw forth the Faculty for Diſeaſes of the Spleen, and will have the proper Salt mixed with the diſtilled Waters, as alſo others with the Extracts: To what end I pray? For ſeeing every Faculty which was in the Medicine, before Calcination, by this is taken away; whether that he may corrupt the Extract, or Water by his ſharpneſs, or by his

his Dryneſs keep back putrefaction; or that beyond others he may ſeem to ſavour better. The ſame man extolleth, without my judgement, his Oleus Extract of *Guiacum*; for ſeeing in the Cure of the French Diſeaſe, and the Catarrhe, there is firſt or chiefly required ſome Aſtriction, by which the members may be ſtrengthned together; Truly for this intention, every man underſtands Decoction to be far more needful and uſeful, which hath any judgment; although a ſmall Doſe of the Extract, be fit for thoſe which ſhall uſe it, eſpecially for delicate and tender perſons.

And in this Extract of mans Skull, he is altogether Childiſh, as of the Secondine, a Calves Liver and Lungs, Pearls, and Corrals.

For what doth he draw forth of the Spirits from the Skull, other then a certain Fat, and ſomething from the earthy matter, and Aſhes by Decoction in *Balneo?* but will that Extract take away the Cauſes of ſuch a Diſeaſe as the Falling-ſickneſs? He will hardly perſwade Children to it: From the Secondine, Liver, and Lungs, what I pray, can be drawn? The broth of their Decoctions, yea, even the ſubſtance it ſelf eaten, and the pouder of the Secondine; will it not offer Nature the ſtrength it ſelf perfecter

fecter to be extracted? Pearls and Corrals only beaten, will yield all their vertue they have received from Gold, without any trouble of Dissolving or Washing with water of Corrosive Spirits.

Whither hitherto have not all kind of Preparation of Medicines been unfolded by us: Truly they have been altogether: But where are their *Medicines* so much cryed up, their *Secrets*, their *Magisteries*, *Mercuries*, *Sulphurs*, *Elixirs*, *Tinctures* *Quintessence*. This Talkative Chymick, *Apollo*, hath invented and framed words without matter, from that infernal desire of Lying and Conzening, to gain to his Sophisters Authority, an opinion of subtile wisedom.

κοξω.

But if we shall speak properly, a Secret and Magistery are the same; nor are they Special, but most General Appellations of Wity Inventions: And the Tincture is the Extraction of the proper Colour, which seeing it is not a Medicinable quality, it ought to be most estranged and alienated from true Physick preparations. I omit that for the most part it is sophisticated (as for example) Spirit of Wine draweth his Redness from white Bones and Ashes, and black Treacle: And this every liquor potentially hot

hot will perform, especially if the earthy Matter be also endued with Heat, which Turners do, who shave pure white plates, ——— from yellow Amber: But this is of an Optick Contemplation: When we Germans would express a thing dissolved by Concoction, and say it is neither boyled nor roasted; Of which kind peradventure, *Elixir* might first get his Name.

A *Quintessence* presupposeth Four other things: If they reckon up the Four Elements, this *Quintessence* will be some divine thing, which is false; seeing from a corruptible Elementary Body: A divine thing is not made (being different in the whole kind) perpetual, lightsome, and endued with a Circular motion, and seeing they are separated also by a most long distance of places.

Neither is *Mercury* it self so inconstant and mutable, as they are in defining their Mercury and Sulphur; they have often affirmed to my face, that by these terms they have meant a *Quintessence*.

From all which it is most apparent, that great wrong hath been done to the *Galenists*: 1. Whilest the *Paracelsians* object, and obtrude ignorance unto them of preparation

paration of their Medicines, and impudently arrogate the Knowledge of their Preparation to themselves only. 2. Whilest *Quercetan* ascribes only to himself by his New *Pharmacopea* the knowledge, and skill of this Art, in which notwithstanding he hath brought in, or innovated nothing at all, he hath discussed nothing by their causes answerable to a wise mans Judgment; he hath exposed or set forth nothing of his own Invention of any worth or moment: What he received or got from the *Germans* in his Travel, he venteth it forth for his own Invention, and hath propounded and set many things forth of divers kinds, false and idle, and which are not pertinent to the Apothecaries Trade, and Profession.

And contrarily he hath left out, and omitted better ancient Medicines, and hath thrust worse in the place of them, and very many manners and wayes of Preparations, which chiefly the Art of Compounding and making up of Medicines requires. For which several Causes, this *Pharmacopea*, doth rather deserve to be stiled, A Bundle (without Method) of certain Medicines to blind and deceive men, ignorant

ignorant and unskillful in the Art of Physick, that, the Self-conceited, they may learn to Calumniate the Truth, brag and vaunt forth their vanities and smokes, despise true Wisdom, by spreading forth very gainful flowers of *Hermetical* Flatteries.

An Universal Table for Judicials of Urine.

THe Commodity of Judgement by it.
The manner and order of Generation of Urine.
When the Urine should be taken.
What Urinal is best to this use.
What light is best to see an Urine.
How long it may be kept before it be seen.
That it ought not to be shaken before it be judged.
That it must be kept wholly, and not a part of it only.

These things hinder Judgement.

Much shaking of it.
Darkness of light.
Over-bright light.
The beams of the Sun.
Cold, and Wind.
A Thick, or Green Urinal: And also if the Urinal be not due in fashion.

An Universal Table

These alter the Urine.

Diversity of kind. { Man. / Woman.

Distinction of Ages. { Childhood. / Youth. / Manhood. / Age.

Complexion. { Sanguine. / Cholerick. / Melancholy. / Phlegmatick.

Diversity of Countries.

Times of the year. { Spring. / Summer. / Harvest. / Winter.

Meat and Drink.	Long sleep.
Medicines, namely Purgations.	Anger.
Exercise and Rest.	Fear.
Much Fasting.	Company with Women.
Surfeting and drunkenness.	Great solubleness.
Much Watching.	Strong Costiveness.
	Much Vomit.

These are to be Considered in Urine.

1. The Substance. { Thick. / Mean. / Thin.

2. The Quantity. { Much. / Mean. / Little.

3. Clearness and Darkness.

4. The Savour.

5. The manner of pissing. { with pain. / with ease. } { willing. / Unwilling.

6. Colour.

6. Colours.
- Light white.
  - Christallit.
  - Snowy.
  - Watery.
- Dark white.
  - Milk white.
  - Horny.
  - Grey.
- Pale.
- Flaxen.
- Yellow, or Gold-Colour.
- Saffron.
  - Light Saffron.
  - Full Saffron.
- Claret.
- Red.
- Grimson.
- Purple.
- Blew.
- Green.
  - Light Green.
  - Green as Grass.
  - Stark Green.
  - Dark Green.
- Oyly.
  - Light Oyly.
  - Stark Oyly.
  - Dark Oyly.
- Ash-Colour.
- Black.

7. Contents.
- The Sediment or Ground.
- The Sublimation or Swim.
- The Cloud.

8. The Crown, or Circle.

10. *Fatness.*

11. *Difform Contents.*
- *Hairs, like red Fatches.*
- *Branny.* { *Gross.* / *Fine.* }
- *Scales.*
- *Ragged scraps.*
- *Motes.*
- *Matter.*
- *Blood.*
- *Gravel, or Stones.*
- *Seed.*

12. *The Regions.*
- *Highest.*
- *Middle.*
- *Lowest.*

13. *The Order.*

14. *Continuance and Alteration.*

These in general be the things meet to be considered in Urine, of which particularly in this Book you may read as much as to this time and purpose serveth.

MVSEVM BRITANNICVM

The

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